



Split System Heat Pumps

Split System Heat Pumps
7 1/2 - 20 Tons - 60 Hz

Air Handlers
5 - 20 Tons - 60 Hz





Introduction

Split System Heat Pump Units . . . Designed With Your Needs In Mind.



The Trane reputation for quality and reliability in air conditioning is apparent with Odyssey™ light commercial split systems. These Trane systems are designed to meet your job requirements every time...and at a competitive price.

Odyssey has Trane quality and reliability built-in; couple that with outstanding efficiency, flexibility and installation ease and you have an unbeatable combination for years of worry-free service and operation.

Manufacturing Control

Trane's exclusive control over the design and manufacturing of all major components is unique in the industry. This approach assures us total control over both the quality and reliability of these components. And allows us to custom match components to deliver the best in split system performance.

Designing the Details

Careful attention was given to designing the details — from control wiring to the access panels. Odyssey units feature time-saving colored and numbered wiring and removable panels which allow complete access to all major components and controls. All outdoor units feature external high and low pressure switches for easy diagnosing and servicing of the unit. Service valves with gauge ports are provided on all units.

Standardized Cabinets

In addition, all cabinets have been standardized. When you are servicing an outdoor unit or an air handler, all components are in the same location from unit to unit.

Filters

The 5, 7½ and 10 ton air handlers are supplied with 1" throwaway filters as standard. The filter racks were designed to easily convert for installation of 2" filters. The 15 and 20 ton air handlers have 2" filters as standard.

UL Listed and ARI Certified

Trane meets or exceeds all nationally recognized agency safety and design standards. Each condensing unit is UL designed, approved and labeled in accordance to UL Standards: UL 1995 for central cooling air conditioners, refrigeration and air conditioning condensing and compressor units. Each air handler is designed, approved and labeled in accordance to UL 465 and UL 1995 standard for heat pumps. Each unit is certified in accordance with ARI Standard 340/360.

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Features and Benefits



Condensing Units Options

The 7½ and 10-ton single compressor models feature single refrigeration circuitry, lowering job installation costs by requiring only one set of refrigerant lines. These units are ideal for the low cost, new construction jobs as well as renovation and replacement buildings.

In addition, Odyssey includes 15 and 20-ton dual compressor units to give true stand-by protection; if one compressor fails, the second will automatically start-up. Also, the first compressor can be serviced without shutting down the unit since the refrigerant circuits are independent.

Dual compressors are not just for protection, they also save energy costs. Most buildings are designed for the peak load requirements yet the building usually operates at less than peak load. During light load conditions, only one compressor functions to maintain the space comfort thus reducing the need for energy. For instance, the EER of the 15 ton unit at ARI conditions is 10.1 and at part load conditions it is 11.6.

Trane split systems have been specified in thousands of applications and you'll find Odyssey will win you even more jobs with its small manageable cabinet. This light, compact design will save time and money for rigging and installation. And the compactness will permit Trane's unit to replace almost any unit — effortlessly.

Each heat pump unit can operate to 50° F as standard in the cooling mode. An accessory Head Pressure Control gives you the capability to operate to 0° F. All heat pumps offer these accessories:

- Head Pressure Control
- Coil Guard Kits
- Isolators both Rubber-in-Shear and Spring Type
- Anti-Short-Cycle Kit
- Time Delay Relay

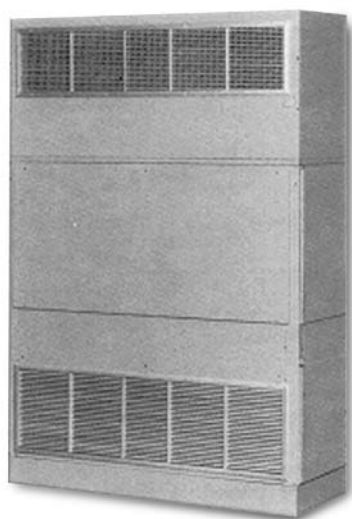
Air Handlers Offer More Flexibility

Flexibility is a key to meeting changing market requirements. Odyssey split systems offer not only heat pumps but also convertible air handlers. The air handlers can be installed either vertically in a mechanical room or horizontally above a ceiling. And it doesn't require any removal of panels to make either airflow application work. These air handlers have a double sloped condensate drain pan that allows for either airflow configuration. And the drain pan can easily be removed for cleaning. All the air handlers feature factory installed belt drive and ball bearing evaporator fans with adjustable sheaves for maximum airflow performance. In fact, the standard motor on the 10-ton air handler will deliver 4000 cfm at 1.4" ESP. Plus oversized motors are available for higher static applications.

Features and Benefits

Odyssey air handler versatility is further increased by a complete line of accessories designed to match and install smoothly:

- Discharge Plenum and Grille
- Return Grille
- Subbase
- Electric Heaters
- High Static Evaporator Motor
- Isolators both Rubber-in-Shear and Spring Type
- A Full Line of Thermostats
- Outdoor Thermostat



Odyssey — A Complete Split System

Odyssey delivers the flexibility to select a complete system that meets your particular job requirements. Air handlers are designed, tested, and rated with outdoor units to let you select the proper match between capacity and load. Heat pumps can also be matched with Trane built-up air handlers. Also, these matched systems can be quickly engineered for specific applications using Trane's computerized selection and load programs.

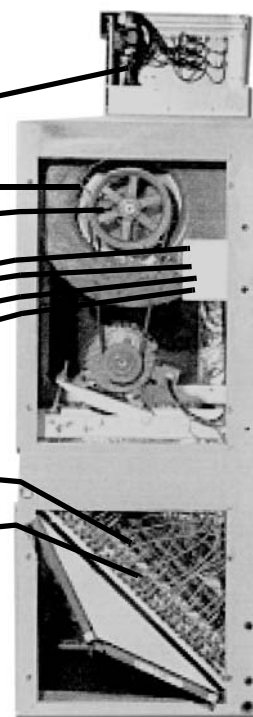
Odyssey Lowers Installation Costs

Your installation costs are reduced with Odyssey. Both outdoor units and air handlers are factory packaged and assembled so jobsite installation is quick and easy. You get a complete unit with all the components, controls and the internal wiring factory ready for a smooth jobsite start-up.

Unlike some competitive models the following components are factory-installed in Trane air handlers:

- Single Point Power Entry
- Blower wheel and housing
- Evaporator motor with sheaves and pulleys
- Low Voltage Terminal Board
- Transformer
- Contactor
- Fan relay
- DX Coil with complete refrigeration circuitry
- Expansion Valve and Check Valves

There's no need to install components and put together the air handler on the job. This provides you with less labor cost and fewer chances for installation errors which cause callbacks. All this means saving you money both in replacement and new construction applications.



Application Considerations

Application of this product should be within the catalogued airflow and performance considerations.

Clearance Requirements

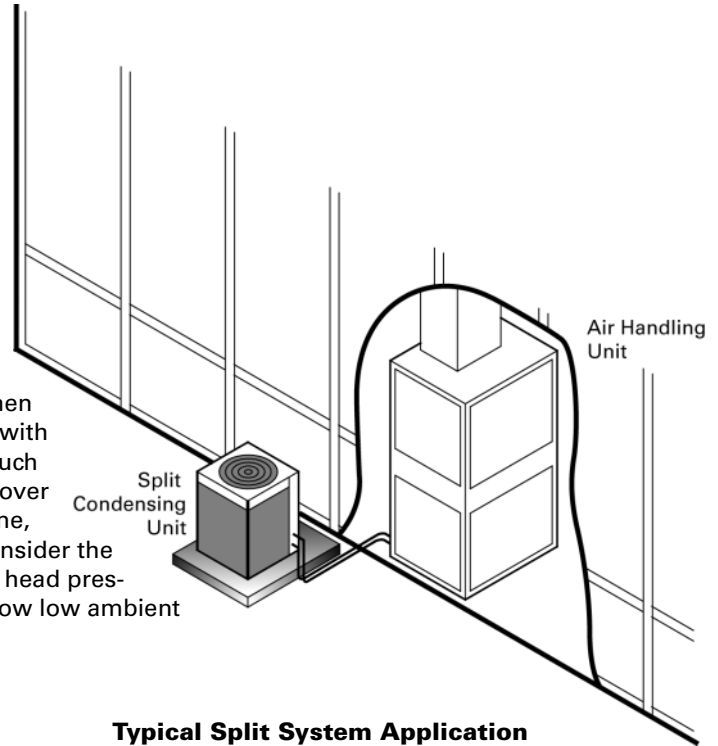
The recommended clearances identified with unit dimensions should be maintained to assure adequate serviceability, maximum capacity and peak operating efficiency. Actual clearances which appear inadequate should be reviewed with the local Trane Representative.

180° Blower Rotation

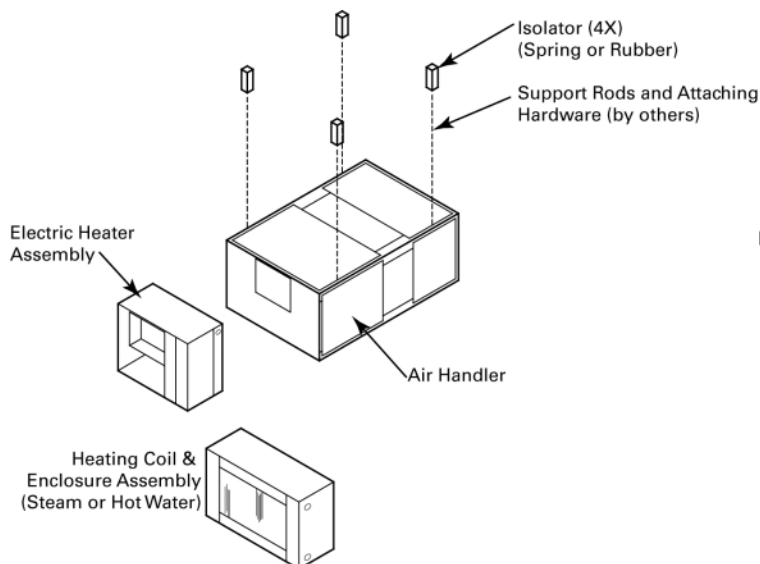
The 5, 7½, and 10 ton air handler blower section can be rotated 180° to change the discharge pattern. This modification must be done in the field and requires an addition of kit. See unit installer's guide.

Low Ambient Cooling

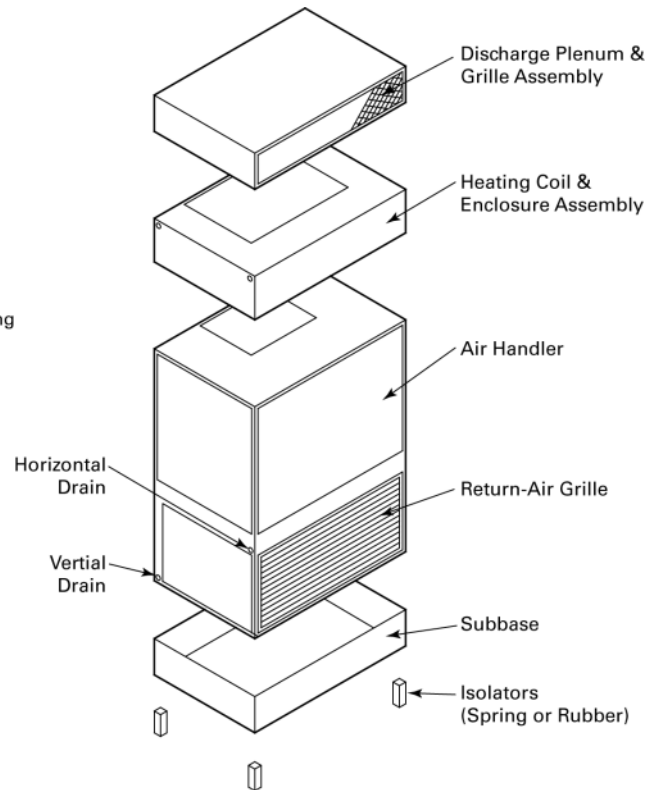
As manufactured, these units can operate to 50° F in the cooling mode of operation. An accessory head pressure control will allow operation to 0° F outdoor ambient. When using these units with control systems such as bypass changeover Variable Air Volume, make sure you consider the requirement for a head pressure control to allow low ambient cooling.



Typical Split System Application



Typical Horizontal Air Handler Application



Typical Vertical Air Handler Application

Selection Procedure

Cooling Capacity

Step 1 — Calculate the building's total and sensible cooling loads at design conditions.

Step 2 — Size the equipment using Table PD-1. Match the cooling loads at design conditions.

Example: The following are the building cooling requirements:

- a. Electrical Characteristics: 460/60/3
- b. Summer Design Conditions:
Entering Evaporator Coil:
80° F DB/67° F WB
Outdoor Ambient: 95° F
Total Cooling Load: 90 MBh
- d. Sensible Cooling Load: 64 MBh
- e. Airflow: 3000 cfm
External Static Pressure:
0.77 inches of water gauge

Table PD-1 shows that TWA090A4 with TWE090A has a gross cooling capacity of 91.1 MBh and 65.9 MBh sensible capacity at 95° F DB ambient and 3000 cfm with 80° F DB/67° F WB air entering the evaporator.

To find the net cooling capacities, fan motor heat must be subtracted. Determine the total unit static pressure:

External Static 0.77 in.
Standard Filter 1 in. 0.10 in.
Supplementary Electric Heat 0.23 in.
Total Static Pressure 1.10 in.

Note: The Evaporator Fan Performance Table has included the effect of a 1 in. filter already. Therefore, the actual Total Static Pressure is
 $1.10 - 0.10 = 1.00$ in. With 3000 cfm and 1.00 inches, Table PD-19 shows a 1.17 Bhp.

Note: The formula below the table can be used to calculate Fan Motor Heat:

$3.5 \times \text{Bhp} = \text{MBh}$
 $3.5 \times 1.17 = 4.09 \text{ MBh}$
 Net Total Cooling Capacity =
 $91.1 \text{ MBh} - 4.09 = 87.01 \text{ MBh}$
 Net Sensible Cooling Capacity =
 $65.9 \text{ MBh} - 4.09 = 61.81 \text{ MBh}$

Heating Capacity

Step 1 — Calculate the building heating load using the Trane calculation form or any other standard accepted method.

Step 2 — Size the equipment using Table PD-13 to match the heating loads at design conditions. The following are building heating requirements:

- a. Total Heating Load: 95.0 MBh
- b. Outdoor Ambient (Winter): 17° F DB
- c. Indoor Return Temperature: 70° F DB
- d. Airflow: 3000 cfm

Table PD-13 indicates the mechanical heating portion of the heat pump will provide 54.8 MBh for the winter design conditions.

Step 3 — Because 54.8 MBh is less than the building's required heating capacity, a supplementary heater must be selected. $95.0 - 54.8 = 40.2$ MBh minimum heater capacity.

From Table PD-36, the 14.96 kW heater has a capacity of 51,058 Btuh. From Table ED-5, the 14.96 kW heater at 460V indicates the heater model number is BAYHTRL415A. This heater will be adequate to cover the residual heat capacity needed for the application.

Air Delivery Selection

External static pressure drop through the air distribution system has been calculated to be 0.77 inches of water gauge. From Table PD-35 static pressure drop through the electric heater is 0.12 inches of water ($0.77 + 0.12 = .89$ in.) Enter Table PD-19 for TWE090A4 at 3000 cfm and .90 static pressure. The standard motor at 790 RPM will give the desired airflow.



Model Number Description

Split System Heat Pump Model Nomenclature

T	W	A	0	9	0	A	3	0	0	D	A
1	2	3	4	5	6	7	8	9	10	11	12

Digits 1,2,3 - Product Type

TWA = Split System Heat Pump

Digits 4,5,6 - Nominal Gross Cooling Capacity (MBh)

090 = 7 1/2 Tons

120 = 10 Tons

180 = 15 Tons

240 = 20 Tons

Digits 7 - Major Development Sequence

A = Single Compressor

B = Dual Compressor

Digits 8 - Electrical

Characteristics

1 = 208-230/60/1

3 = 208-230/60/3

4 = 460/60/3

W = 575/60/3

Digits 9,10 - Factory Installed Options

00 = Packed Stock

0S = Black Epoxy Coated Coil

Digits 11 - Minor Design Sequence

D = Fourth

Digits 12 - Service Digit

A = First

Air Handler Model Nomenclature

T	W	E	0	9	0	A	1	0	0	C	A
1	2	3	4	5	6	7	8	9	10	11	12

Digits 1,2,3 - Product Type

TWE = Split System Heat Pump/
Cooling Air Handler

Digits 4,5,6 - Nominal Gross Cooling Capacity (MBh)

060 = 5 Tons

090 = 7 1/2 Tons

120 = 10 Tons

180 = 15 Tons

240 = 20 Tons

Digits 7 - Refrigerant Circuit

A = Single

B = Dual

Digits 8 - Electrical

Characteristics

1 = 208-230/60/1

3 = 208-230/60/3

4 = 460/60/3

W = 575/60/3

Digits 9,10 - Factory Installed Options

00 = Packed Stock

Digits 11 - Minor Design Sequence

C = Third

Digits 12 - Service Digit

A = First

General Data

Table GD-1: General Data – Heat Pumps

	7 1/2 Ton	10 Ton	15 Ton	20 Ton
	Single Compressor TWA090A3,A4,AW	Single Compressor TWA120A3,A4,AW	Dual Compressor TWA180B3,B4,BW	Dual Compressor TWA240B3,B4,BW
Cooling Performance¹				
Gross Cooling Capacity				
Matched Air Handler	91,000	124,000	182,000	240,000
Matched Heat Pump Only ²	91,000	124,000	182,000	240,000
ARI Net Cooling Capacity ³	89,000	120,000	176,000	234,000
EER ⁴				
Matched Air Handler	10.1	10.1	9.9	9.3
Heat Pump Only	11.5	11.1	10.9	10.3
Integrated Part Load Value ⁵	-	-	11.0	10.5
System/Condensing Unit Power (kW)	8.70/7.95	11.91/11.07	17.77/16.62	24.99/23.20
Heating Performance				
ARI Heating and Matched Air Handler				
High Temperature Capacity	87,000	122,000	168,000	234,000
System kW/COP	7.68/3.3	10.82/3.2	16.10/3.1	22.42/3.1
Low Temperature Capacity	55,000	80,000	106,000	154,000
System kW/COP	6.73/2.4	9.62/2.4	14.16/2.2	19.54/2.30
Compressor				
No./Type	1/Trane 3-D™ Scroll	1/Trane 3-D™ Scroll	2/Trane 3-D™ Scroll	2/Trane 3-D™ Scroll
No. Motors/HP	1/7.5	1/10	2/7.5	2/10
Motor RPM	3450	3450	3450	3450
Sound Rating (BELS)⁶				
	8.8	8.8	8.8	8.8
System Data⁷				
No. Refrigerant Circuits	1	1	2	2
Suction Line (in.) OD	1 3/8	1 3/8	1 3/8	1 3/8
Liquid Line (in.) OD	1/2	1/2	1/2	1/2
Outdoor Coil - Type				
Tube Size (in.) OD	Plate Fin	Plate Fin	Plate Fin	Plate Fin
Face Area (sq ft)	.375	.375	.375	.375
Rows/FPI	19.2	29.5	38.5	50.2
Refrigerant Control	2/18	2/18	2/18	2/18
Outdoor Fan - Type				
Propeller	Expansion Valve	Expansion Valve	Expansion Valve	Expansion Valve
No. Used/Diameter (in.)	Propeller	Propeller	Propeller	Propeller
Drive Type/No. Speeds	1/26	1/28	2/26	2/28
CFM	Direct/1	Direct/1	Direct/1	Direct1
No. Motor/HP	5890	8200	11,780	16,240
Motor RPM	1/1.50	1/1.00	2/1.50	2/1.00
	1100	1100	1100	1100
Refrigerant Charge (Field Supplied)				
(lbs of R-22) ⁸	18.00	31.50	36.00	48.50

Notes:

- Cooling Performance is rated at 95° F ambient, 80° F entering dry bulb, 67° F entering wet bulb. Gross capacity does not include the effect of fan motor heat. ARI capacity is net and includes the effect of fan motor heat. Certified in accordance with the Unitary Large Equipment certification program, which is based on ARI Standard 340/360-00.
- Condensing unit only gross cooling capacity rated at 45° F saturated suction temperature and at 95° F ambient.
- ARI net cooling capacity is calculated with matched blower coil and 25 feet of 1 3/8" or 1/2" OD interconnecting tubing.
- EER is rated at ARI conditions and in accordance with DOE test procedures.
- Integrated part load value is based on ARI Standard 340/360-00. Units are rated at 80° F ambient, 80° F entering dry bulb (DB), and 67° F entering wet bulb (WB) at ARI rated cfm.
- Sound rating shown is tested in accordance with ARI Standard 270 or 370.
- Refer to refrigerant piping applications manual for line sizing and line length.
- Refrigerant (operating) charge is for condensing unit (all circuits) with matching blower coils and 25 feet of interconnecting refrigerant lines. All units are supplied with a small nitrogen holding charge only.



General Data

Table GD-2: General Data – Air Handlers

	5 Ton		7 1/2 Ton		10 Ton	
	Single Circuit TWE060A1,A3,A4,AW	Dual Circuit TWE060B1,B3,B4	Single Circuit TWE090A1,A3 ¹ ,AW	Dual Circuit TWE090B1,B3	Single Circuit TWE0120A1	Single Circuit TWE120A3 ¹ ,AW
System Data						
No. Refrigerant Circuits	1	2	1	2	1	1
Suction Line (in.) OD	1 1/8	3/4	1 3/8	1 1/8	1 3/8	1 3/8
Liquid Line (in.) OD	3/8	5/16	1/2	3/8	1/2	1/2
Indoor Coil -Type						
Tube Size (in.)	Plate Fin	Plate Fin	Plate Fin	Plate Fin	Plate Fin	Plate Fin
Face Area (sq. ft.)	.375	.375	.375	.375	.375	.375
Rows/FPI	5.0	5.0	8.1	8.1	11.2	11.2
Refrigerant Control	3/12	3/12	3/12	3/12	4/12	4/12
Drain Connection Size (in.)	Expansion Valve 1 PVC	Expansion Valve 1 PVC	Expansion Valve 1 PVC	Expansion Valve 1 PVC	Expansion Valve 1 PVC	Expansion Valve 1 PVC
Indoor Fan - Type						
No. Used/Diameter x Width (in.)	Centrifugal 1/12 x 12	Centrifugal 1/12 x 12	Centrifugal 1/15 x 15	Centrifugal 1/15 x 15	Centrifugal 1/15 x 15	Centrifugal 1/15 x 15
Drive Type/No. Speeds	Belt/Adjustable 2000	Belt/Adjustable 2000	Belt/Adjustable 3000	Belt/Adjustable 3000	Belt/Adjustable 4000	Belt/Adjustable 4000
CFM	1	1	1	1	1	1
No. Motors	.75/1.00	.75/1.00	1.50/2.00	1.50/2.00	2.00/3.00	2.00/3.00
Motor HP - Standard/Oversized	1725	1725	1725	1725	1725	1725
Motor RPM	56	56	56H	56H	56HZ	56HZ
Motor Frame Size						
Filters - Type/Furnished						
(No.)/Size Recommended	Throwaway/Yes (1) 16 x 20 x 1 (1) 20 x 20 x 1	Throwaway/Yes (1) 16 x 20 x 1 (1) 20 x 20 x 1	Throwaway/Yes (3) 16 x 25 x 1	Throwaway/Yes (3) 16 x 25 x 1	Throwaway/Yes (4) 16 x 25 x 1	Throwaway/Yes (4) 16 x 25 x 1

ARI tested and certified with various heat pumps per ARI Standard 340/360-00 certification program. Refer to performance data section in this catalog.

Notes:

1 Ships wired for 208-230/60/3. Field convertible to 460/60/3.

2 TWE060A1 has motor RPM of 3450 for oversized motor.

3 TWE120A1 does not have an oversized motor option.

Table GD-2: General Data – Air Handlers (continued)

	10 Ton		15 Ton	20 Ton
	Dual Circuit TWE120B1	Dual Circuit TWE120B3 ¹ ,BW	Dual Circuit TWE180B3,B4,BW	Dual Circuit TWE240B3,B4,BW
System Data				
No. Refrigerant Circuits	2	2	2	2
Suction Line (in.) OD	1 1/8	1 1/8	1 3/8	1 3/8
Liquid Line (in.) OD	3/8	3/8	1/2	1/2
Indoor Coil -Type				
Tube Size (in.)	Plate Fin	Plate Fin	Plate Fin	Plate Fin
Face Area (sq. ft.)	.375	.375	.375	.375
Rows/FPI	11.2	11.2	16.3	21.6
Refrigerant Control	4/12	4/12	3/12	3/12
Drain Connection Size (in.)	Expansion Valve 1 PVC	Expansion Valve 1 PVC	Expansion Valve 1 PVC	Expansion Valve 1 PVC
Indoor Fan - Type				
No. Used/Diameter x Width (in.)	Centrifugal 1/15 x 15	Centrifugal 1/15 x 15	Centrifugal 2/15 x 15	Centrifugal 2/15 x 15
Drive Type/No. Speeds	Belt/Adjustable 4000	Belt/Adjustable 4000	Belt/Adjustable 6000	Belt/Adjustable 8000
CFM	1	1	1	1
No. Motors	2.00/-	2.00/3.00	3.00/5.00	5.00/7.50
Motor HP - Standard/Oversized	1725	1725	1735/1750	1750/3470
Motor RPM	56HZ	56HZ	145T	184T
Motor Frame Size				
Filters - Type/Furnished				
(No.)/Size Recommended	Throwaway/Yes (4) 16 x 25 x 1	Throwaway/Yes (4) 16 x 25 x 1	Throwaway/Yes (8) 15 x 20 x 2	Throwaway/Yes (4) 16 x 25 x 2 (4) 16 x 20 x 2

ARI tested and certified with various heat pumps per ARI Standard 340/360-00 certification program. Refer to performance data section in this catalog.

Notes:

1 Ships wired for 208-230/60/3. Field convertible to 460/60/3.



Performance Data

7 1/2, 10 Tons

Table PD-1: Gross Cooling Capacities (MBh) 7 1/2 Ton TWA090A Heat Pump with 7 1/2 Ton TWE090A Air Handler

CFM Airflow	Enter. DB (° F)	Ambient Temperature																															
		85								95								105								115							
		Entering WB																															
		61		67		73		61		67		73		61		67		73		61		67		73									
MBH	SHC	MBH	SHC	MBH	SHC	MBH	SHC	MBH	SHC	MBH	SHC	MBH	SHC	MBH	SHC	MBH	SHC	MBH	SHC	MBH	SHC	MBH	SHC	MBH	SHC								
2700	75	84.1	67.2	92.8	56.3	102.1	37.7	81.2	65.7	89.5	55.0	98.5	36.4	78.0	64.2	86.1	53.6	94.8	35.2	74.7	62.5	82.4	52.1	90.9	33.8								
	80	84.6	78.6	93.0	64.5	102.1	49.6	81.8	77.2	89.8	63.2	98.5	48.3	78.8	75.7	86.3	61.7	94.8	46.9	75.6	74.1	82.6	60.0	91.0	45.5								
	85	86.9	86.9	93.1	75.8	102.2	61.3	84.4	84.4	89.9	74.4	98.7	60.0	81.7	81.7	86.4	72.9	95.0	58.6	78.9	78.9	82.9	71.3	91.1	57.2								
	90	91.2	91.2	93.7	87.3	102.3	72.9	88.7	88.7	90.6	85.9	98.7	71.5	86.0	86.0	87.3	84.5	95.1	70.0	83.1	83.1	84.0	83.0	91.3	68.5								
3000	75	87.5	70.3	94.4	54.8	103.7	38.4	82.7	68.8	91.1	53.4	100.0	37.1	79.4	67.2	87.5	51.9	96.1	35.7	75.9	65.6	83.7	50.4	92.2	34.3								
	80	86.5	82.9	94.6	67.5	103.7	51.2	83.6	81.4	91.1	65.9	100.0	49.9	80.5	79.9	87.6	64.4	96.2	48.5	77.0	77.0	83.9	62.8	92.3	47.1								
	85	89.6	89.6	94.7	79.7	103.8	64.0	87.1	87.1	91.4	78.3	100.2	62.6	84.3	84.3	87.9	76.7	96.4	61.3	81.3	81.3	84.3	75.2	92.5	59.9								
	90	94.1	94.1	95.7	92.4	103.9	76.4	91.5	92.5	91.0	100.3	75.0	88.6	88.6	88.7	88.7	96.5	73.6	85.6	85.6	85.7	85.7	92.6	72.1									
3300	75	87.0	73.3	95.7	56.6	104.9	39.0	83.9	71.7	92.3	55.2	101.2	37.6	80.6	70.1	88.6	53.7	97.3	36.2	77.1	68.5	84.8	52.2	93.3	34.8								
	80	88.1	87.0	95.8	70.1	105.0	52.8	84.7	84.7	92.4	68.6	101.2	51.4	81.9	81.9	88.8	67.0	97.4	50.0	78.9	78.9	85.0	65.4	93.4	48.6								
	85	92.0	92.0	96.1	83.4	105.1	66.5	89.3	89.3	92.8	82.0	101.4	65.2	86.4	86.4	89.2	80.4	97.6	63.8	83.3	83.3	85.6	78.9	93.6	62.4								
	90	96.6	96.6	97.5	97.2	105.2	79.9	93.9	93.9	93.9	93.9	101.5	78.5	90.9	90.9	91.0	91.9	97.7	77.0	87.8	87.8	87.9	87.9	93.7	75.5								
3600	75	88.2	76.1	96.8	58.3	106.0	39.5	85.0	74.6	93.3	56.9	102.2	38.1	81.6	73.0	89.6	55.4	98.2	36.7	78.1	71.3	85.7	53.9	94.1	35.3								
	80	89.3	89.3	96.9	72.7	106.1	54.2	86.6	86.6	93.4	71.2	102.3	52.9	83.7	83.7	89.8	69.6	98.3	51.5	80.6	80.6	85.9	68.0	94.3	50.1								
	85	94.1	94.1	97.4	87.0	106.2	69.0	91.3	91.3	94.0	85.6	102.5	67.6	88.3	88.3	90.4	84.0	98.4	66.1	85.1	85.1	86.7	82.5	94.4	64.6								
	90	98.9	98.9	98.9	98.9	106.4	83.2	96.0	96.0	96.1	96.1	102.6	81.8	92.9	92.9	93.0	93.0	98.7	80.3	89.7	89.7	89.8	89.8	94.8	78.8								

Notes:

1 Dry coil condition. Total gross capacity (MBh) shown to the left is not applicable. In this case the Sensible Heat Capacity (SHC) is the total capacity.

All temperatures are in ° F.

All capacities shown are gross and have not considered indoor fan heat.

To obtain net cooling capacities, subtract indoor fan heat.

MBH = Total Gross Cooling Capacity

SHC = Sensible Heat Capacity

Table PD-2: Gross Cooling Capacities (MBh) 10 Ton TWA120A Heat Pump with 10 Ton TWE120A Air Handler

CFM Airflow	Enter. DB (° F)	Ambient Temperature																							
		85						95						105						115					
		Entering WB						Entering WB						Entering WB						Entering WB					
		61	67	73	61	67	73	61	67	73	61	67	73	61	67	73	61	67	73	61	67	73	61	67	73
		MBH	SHC	MBH	SHC	MBH	SHC	MBH	SHC	MBH	SHC	MBH	SHC	MBH	SHC	MBH	SHC	MBH	SHC	MBH	SHC	MBH	SHC	MBH	SHC
3600	75	114.6	90.1	126.2	76.3	138.8	51.1	110.6	88.1	121.8	74.5	134.0	49.4	106.2	85.9	117.1	72.6	128.9	47.7	101.7	83.6	112.2	70.6	123.4	45.8
	80	115.0	104.8	126.4	85.8	138.8	66.4	111.1	102.8	122.0	83.9	134.0	64.6	106.9	100.7	117.3	81.9	128.9	62.6	102.6	98.5	112.4	79.8	123.5	60.6
	85	117.1	117.1	126.5	100.7	138.8	81.2	113.7	113.7	122.0	98.6	134.0	79.3	110.1	110.1	117.4	96.5	129.0	77.4	106.3	106.3	112.5	94.3	123.6	75.3
	90	122.7	122.7	126.9	115.2	138.9	95.9	119.2	119.2	122.7	113.2	134.2	94.0	115.5	115.5	118.2	111.1	129.1	92.1	111.7	111.7	113.5	109.0	123.7	90.0
4000	75	116.7	94.0	128.5	73.3	141.1	52.1	112.5	91.9	123.9	71.4	136.1	50.4	108.1	86.7	119.1	69.3	130.8	48.5	103.5	87.5	114.0	67.2	125.2	46.5
	80	117.5	110.2	128.6	89.5	141.1	68.5	113.4	108.1	124.0	87.6	136.1	66.6	109.2	106.0	119.2	85.5	130.8	64.6	104.9	103.8	114.2	83.4	125.3	62.6
	85	120.7	120.7	128.6	105.4	141.1	84.5	117.1	117.1	124.1	103.4	136.2	82.6	113.4	113.4	119.3	101.2	131.0	80.7	109.5	109.5	114.4	99.0	125.4	78.6
	90	126.6	126.6	129.5	121.4	141.2	100.5	122.9	122.9	125.2	119.4	136.3	98.6	119.1	119.1	120.7	117.3	131.1	96.6	115.0	115.0	115.9	115.2	125.5	94.5
4400	75	118.5	97.7	130.3	75.5	142.9	53.0	114.2	95.6	125.6	73.6	137.8	51.1	109.6	93.4	120.7	71.6	132.4	49.2	105.0	91.1	115.5	69.4	126.7	47.1
	80	119.7	115.3	130.4	93.0	142.9	70.4	115.6	113.2	125.8	91.0	137.8	68.5	113.3	111.1	120.8	89.0	132.5	66.5	106.5	106.5	115.7	86.8	126.8	64.5
	85	123.9	123.9	130.5	110.0	143.0	87.7	120.2	120.2	125.9	107.9	138.0	85.8	116.3	116.3	121.1	105.8	132.6	83.8	112.2	112.2	116.1	103.6	126.9	81.7
	90	129.9	129.9	131.9	127.4	143.1	104.8	126.1	126.1	127.5	125.4	138.1	102.9	122.2	122.2	122.0	122.0	132.7	100.9	117.9	117.9	117.8	117.8	126.9	98.5
4800	75	120.0	101.3	131.9	77.7	144.5	53.6	115.6	99.1	127.1	75.7	139.4	51.7	111.1	96.9	122.1	73.7	133.8	49.8	106.3	94.7	116.7	71.5	128.0	47.7
	80	121.7	120.2	132.0	96.3	144.5	72.2	116.7	116.7	127.2	94.4	139.3	70.3	112.8	112.8	122.2	92.3	133.9	68.3	108.7	108.7	116.9	89.8	128.0	66.2
	85	126.7	126.7	132.2	114.4	144.6	90.7	122.9	122.9	127.6	112.4	139.5	88.8	118.8	118.8	122.7	110.3	134.0	86.8	114.6	114.6	117.6	108.0	128.2	84.7
	90	132.9	132.9	134.1	133.2	144.7	109.0	129.0	129.0	128.9	128.9	138.5	106.9	124.9	124.9	124.8	124.8	134.1	104.8	120.5	120.5	120.4	120.4	128.2	102.6

Notes:

1 Dry coil condition. Total gross capacity (MBh) shown to the left is not applicable. In this case the Sensible Heat Capacity (SHC) is the total capacity.

All temperatures are in ° F.

All capacities shown are gross and have not considered indoor fan heat.

To obtain net cooling capacities, subtract indoor fan heat.

MBH = Total Gross Cooling Capacity

SHC = Sensible Heat Capacity



Performance Data

15, 20 Tons

Table PD-3: Gross Cooling Capacities (MBh) 15 Ton TWA180B Heat Pump with 15 Ton TWE180B Air Handler

CFM Airflow	Enter. DB (° F)	Ambient Temperature																							
		85						95						105						115					
		Entering WB																							
		61		67		73		61		67		73		61		67		73		61		67		73	
MBH	SHC	MBH	SHC	MBH	SHC	MBH	SHC	MBH	SHC	MBH	SHC	MBH	SHC	MBH	SHC	MBH	SHC	MBH	SHC	MBH	SHC	MBH	SHC	MBH	SHC
5400	75	167.8	134.1	185.1	112.3	203.6	75.2	161.9	131.2	178.6	109.7	196.4	72.7	155.5	128	171.6	106.9	188.9	70.1	148.8	124.7	164.3	104	181.1	67.5
	80	168.7	157	185.4	128.9	203.7	99.1	163	154.1	178.9	126.2	196.5	96.4	156.9	151.1	171.8	122.9	189.1	93.7	150.4	147.9	164.6	119.8	181.4	90.8
	85	173.3	173.3 ¹	185.7	151.5	203.9	122.5	168.4	168.4 ¹	179.2	148.6	196.8	119.8	163	163.0 ¹	172.3	145.5	189.4	117.1	157.3	157.3 ¹	165.1	142.4	181.8	114.3
	90	182	182.0 ¹	186.8	174.4	204.1	145.5	176.9	176.9 ¹	180.6	171.6	197	142.7	171.4	171.4 ¹	174	168.7	189.6	139.8	165.7	165.7 ¹	167.2	165.6	182	136.8
6000	75	170.9	140.3	188.3	109.4	206.8	76.7	164.8	137.3	181.5	106.6	199.3	74.1	158.3	134.2	174.4	103.7	191.6	71.3	151.3	130.8	166.9	100.7	183.7	68.5
	80	172.3	165.5	188.4	134.5	206.8	102.3	166.5	162.6	181.7	131.6	199.5	99.7	160.3	159.5	174.7	128.5	191.8	96.9	153.5	153.5 ¹	167.2	125.3	184	94.1
	85	178.8	178.8 ¹	188.9	159.2	207.1	127.9	173.6	173.6 ¹	182.3	156.3	199.8	125.2	168	168.0 ¹	175.3	153.2	192.2	122.5	162.1	162.1 ¹	168	150	184.4	119.7
	90	187.9	187.9 ¹	190.7	184.5	207.3	152.7	182.5	182.5 ¹	184.4	181.7	200	149.9	176.8	176.8 ¹	176.9	176.9 ¹	192.5	146.9	170.8	170.8 ¹	171	171.0 ¹	184.7	144
6600	75	173.5	146.3	190.9	113	209.3	77.8	167.2	143.2	184	110.2	201.7	75.1	160.5	140	176.7	107.3	193.9	72.3	153.5	136.6	169.1	104.2	185.8	69.5
	80	175.6	173.7	191.1	139.9	209.4	105.4	169	169.0 ¹	184.3	137	201.9	102.7	163.3	163.3 ¹	177	133.8	194.1	100	157.3	157.3 ¹	169.5	130.6	186.2	97.2
	85	183.6	183.6 ¹	191.7	166.7	209.8	133	178.1	178.1 ¹	184.9	163.7	202.3	130.3	172.3	172.3 ¹	177.9	160.6	194.3	127.2	166.2	166.2 ¹	170.5	157.5	186.4	124.2
	90	192.9	192.9 ¹	194.3	194.3 ¹	210	159.6	187.3	187.3 ¹	187.5	187.5 ¹	202.6	156.7	181.4	181.4 ¹	181.6	181.6 ¹	194.9	153.8	175.2	175.2 ¹	175.4	175.4 ¹	187	150.8
7200	75	175.7	152	193.1	116.5	211.5	78.8	169.4	148.9	186.1	113.7	203.7	76	162.6	145.6	178.6	110.7	195.8	73.3	155.5	142.2	170.9	107.7	187.6	70.4
	80	178.2	178.2 ¹	193.4	145.1	211.6	108.4	172.7	172.7 ¹	186.4	142.1	204	105.7	166.9	166.9 ¹	179	139	196.1	102.9	160.7	160.7 ¹	171.3	135.7	188	100.1
	85	187.8	187.8 ¹	194.2	173.9	212	138	182.1	182.1 ¹	187.4	170.9	204.2	134.8	176.1	176.1 ¹	180.2	167.8	196.4	131.8	169.8	169.8 ¹	172.8	164.6	188.4	128.8
	90	197.4	197.4 ¹	197.5	197.5 ¹	212.3	166.3	191.6	191.6 ¹	191.7	191.7 ¹	204.7	163.4	185.4	185.4 ¹	185.6	185.6 ¹	196.9	160.4	179.1	179.1 ¹	179.3	179.3 ¹	188.9	157.4

Notes:

1 Dry coil condition. Total gross capacity (MBh) shown to the left is not applicable. In this case the Sensible Heat Capacity (SHC) is the total capacity.

All temperatures are in ° F.

All capacities shown are gross and have not considered indoor fan heat.

To obtain net cooling capacities, subtract indoor fan heat.

MBH = Total Gross Cooling Capacity

SHC = Sensible Heat Capacity

Table PD-4: Gross Cooling Capacities (MBh) 20 Ton TWA240B Heat Pump with 20 Ton TWE240B Air Handler

CFM Airflow	Enter. DB (° F)	Ambient Temperature																							
		85						95						105						115					
		Entering WB																							
		61		67		73		61		67		73		61		67		73		61		67		73	
MBH	SHC	MBH	SHC	MBH	SHC	MBH	SHC	MBH	SHC	MBH	SHC	MBH	SHC	MBH	SHC	MBH	SHC	MBH	SHC	MBH	SHC	MBH	SHC	MBH	SHC
7200	75	223.8	177.3	246	148.8	269.9	99.5	215.5	173.1	237	145.1	260.1	96.1	206.9	168.8	227.5	141.3	249.8	92.5	198	164.3	217.7	137.3	238.9	88.8
	80	224.8	206.8	246.2	169	269.9	130	216.8	202.6	237.3	165.1	260.1	126.2	208.5	198.4	227.9	161	249.8	122.3	199.9	194.1	218.1	156.9	238.9	118.3
	85	229.6	229.6 ¹	246.4	198.1	270	159.6	222.6	222.6 ¹	237.5	194	260.3	155.8	215.3	215.3 ¹	228.1	189.7	250	151.9	207.7	207.7 ¹	218.4	185.3	239.2	147.8
	90	240.5	240.5 ¹	247.6	227.3	270.3	189	233.4	233.4 ¹	238.9	223.2	260.6	185.2	225.9	225.9 ¹	230	219.1	250.3	181.3	218	218.0 ¹	220.7	214.8	239.3	176.7
8000	75	227.8	185.1	250.2	143.9	274.2	101.4	219.3	180.8	240.9	139.9	264.1	98	210.4	176.4	231.1	135.9	253.4	94.1	201.2	171.9	221	131.7	242.2	90
	80	229.4	217.4	250.4	176.3	274.1	134	221.2	213.2	241.2	172.4	264.1	130.3	212.8	208.9	231.2	167.9	253.4	126.3	203	203.0 ¹	221.2	163.5	242.3	122.3
	85	236.4	236.4 ¹	250.6	207.6	274.3	166.2	229.3	229.3 ¹	241.4	203.5	264.3	162.4	221.6	221.6 ¹	231.9	199.2	253.7	158.5	213.6	213.6 ¹	222	194.8	242.6	154.4
	90	247.9	247.9 ¹	252.5	239.7	274.6	198.2	240.4	240.4 ¹	243.8	235.6	264.4	193.9	232.6	232.6 ¹	234.7	231.4	253.8	189.7	224.3	224.3 ¹	224.1	224.1 ¹	242.8	185.4
8800	75	231.2	192.5	253.6	148.3	277.7	103	222.4	188.2	244.1	144.4	267.4	99.3	213.4	183.7	234.1	140.3	256.4	95.3	204	179.2	223.7	136.1	244.9	91.2
	80	233.5	227.6	253.9	183.3	277.6	137.8	225.3	223.4	244.2	178.8	267.3	134.1	215.8	215.8 ¹	234.3	174.5	256.5	130.1	207.8	207.8 ¹	224	170.1	245	126
	85	242.5	242.5 ¹	254.2	216.8	277.9	172.5	235	235.0 ¹	244.9	212.7	267.6	168.7	227.1	227.1 ¹	235.2	208.4	256.8	164.7	218.8	218.8 ¹	225.1	204	245.4	160.6
	90	254.3	254.3 ¹	257	251.7	278	206.3	246.5	246.5 ¹	248.2	247.6	267.8	202.3	238.4	238.4 ¹	238.2	238.2 ¹	257	198.1	229.8	229.8 ¹	229.6	229.6 ¹	245.6	193.7
9600	75	234	199.6	256.5	152.6	280.7	104.3	225.2	195.2	246.8	148.6	270.1	100.5	216	190.8	236.7	144.5	258.9	96.5	206.6	186.2	226.1	140.3	247.2	92.4
	80	235.8	235.8 ¹	256.6	189.4	280.7	141.5	228.3	228.3 ¹	247	185.2	270.1	137.7	220.3	220.3 ¹	236.9	180.9	259	133.7	212	212.0 ¹	226.4	176.4	247.3	129.6
	85	247.9	247.9 ¹	257.4	225.8	280.9	178.6	240.1	240.1 ¹	248	221.6	270.5	174.7	231.9	231.9 ¹	238.2	217.2	259.4	170.7	223.3	223.3 ¹	228	212.8	247.7	166.6
	90	260	260.0 ¹	259.7	259.7 ¹	281.1	214.5	252	252.0 ¹	251.8	251.8 ¹	270.7	210.4	243.5	243.5 ¹	243.4	243.4 ¹	259.6	206.2	234.6	234.6 ¹	234.5	234.5 ¹	248	201.7

Notes:

1 Dry coil condition. Total gross capacity (MBh) shown to the left is not applicable. In this case the Sensible Heat Capacity (SHC) is the total capacity.

All temperatures are in ° F.

All capacities shown are gross and have not considered indoor fan heat.

To obtain net cooling capacities, subtract indoor fan heat.

MBH = Total Gross Cooling Capacity

SHC = Sensible Heat Capacity

Performance Data

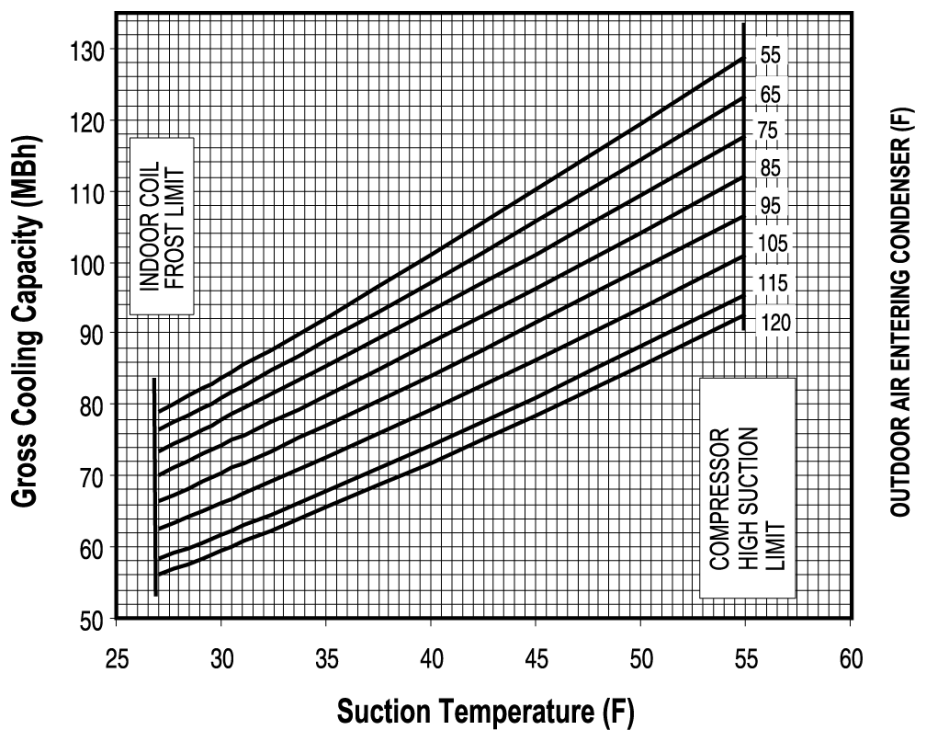
7 1/2 Ton

Table PD-5: Gross Cooling Capacities (MBh) 7 1/2 Ton TWA090A Heat Pump Only

Outdoor Temperature		Suction Temperature Degrees F					
In Degrees F		30	35	40	45	50	55
65	Head press PSIG	168	173	179	185	191	197
	Cap. Btuh/1000	81	89	97.2	105.8	114.5	123.4
	Unit KW	5.56	5.69	5.83	5.97	6.13	6.28
75	Head press PSIG	194	199	205	211	217	224
	Cap. Btuh/1000	77.8	85.3	93.1	101.1	109.4	117.8
	Unit KW	6.09	6.23	6.38	6.54	6.7	6.87
85	Head press PSIG	221	227	234	240	247	254
	Cap. Btuh/1000	74.1	81.3	88.7	96.3	104.2	112.3
	Unit KW	6.71	6.87	7.03	7.2	7.38	7.56
95	Head press PSIG	252	258	265	272	279	286
	Cap. Btuh/1000	70.3	77.1	84.1	91.4	98.9	106.7
	Unit KW	7.43	7.6	7.77	7.95	8.14	8.33
105	Head press PSIG	285	292	299	306	314	322
	Cap. Btuh/1000	66.1	72.6	79.3	86.3	93.5	101.1
	Unit KW	8.23	8.41	8.6	8.79	8.98	9.18
115	Head press PSIG	321	328	336	343	351	360
	Cap. Btuh/1000	61.8	67.9	74.3	81	88.1	95.5
	Unit KW	9.12	9.32	9.51	9.71	9.91	10.12

Performance data calculated at 15° F subcooling and 20% superheat and does not include capacity loss due to refrigerant lines.

Table PD-6: Capacity Curves 7 1/2 Ton TWA090A Heat Pump Only





Performance Data

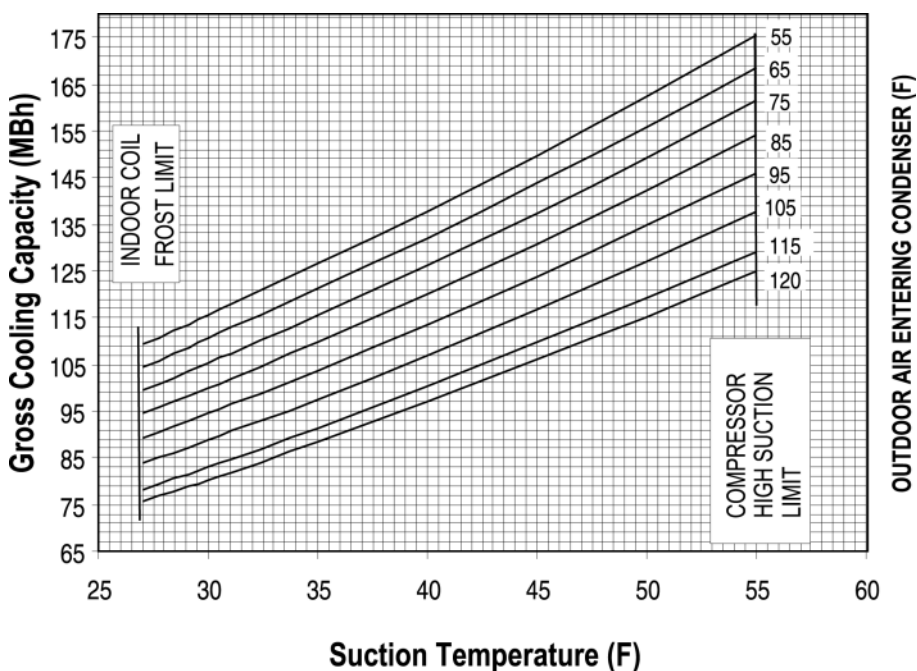
10 Ton

Table PD-7: Gross Cooling Capacities (MBh) 10 Ton TWA120A Heat Pump Only

Outdoor Temperature		Suction Temperature Degrees F					
In Degrees F		30	35	40	45	50	55
65	Head press PSIG	167	172	178	183	189	195
	Cap. Btuh/1000	110.6	121.1	132.1	143.7	155.9	168.6
	Unit KW	7.87	8.04	8.22	8.41	8.61	8.83
75	Head press PSIG	192	197	202	208	214	221
	Cap. Btuh/1000	105.4	115.4	126.1	137.3	149.1	161.4
	Unit KW	8.56	8.75	8.95	9.16	9.38	9.62
85	Head press PSIG	219	224	230	236	243	250
	Cap. Btuh/1000	100	109.6	119.9	130.7	142	153.9
	Unit KW	9.38	9.59	9.82	10.05	10.3	10.55
95	Head press PSIG	248	254	260	267	274	281
	Cap. Btuh/1000	94.5	103.7	113.5	123.8	134.7	146.1
	Unit KW		10.35	10.58	10.82	11.07	11.59
105	Head press PSIG	281	287	293	300	307	315
	Cap. Btuh/1000	88.8	97.6	107	116.8	127.1	137.8
	Unit KW	11.45	11.7	11.96	12.22	12.48	12.74
115	Head press PSIG	316	322	329	336	343	351
	Cap. Btuh/1000	83.1	91.4	100.3	109.6	119.2	129.2
	Unit KW	12.69	12.95	13.21	13.48	13.73	13.98

Performance data calculated at 15° F subcooling and 20% superheat and does not include capacity loss due to refrigerant lines.

Table PD-8: Capacity Curves 10 Ton TWA120A Heat Pump Only



Performance Data

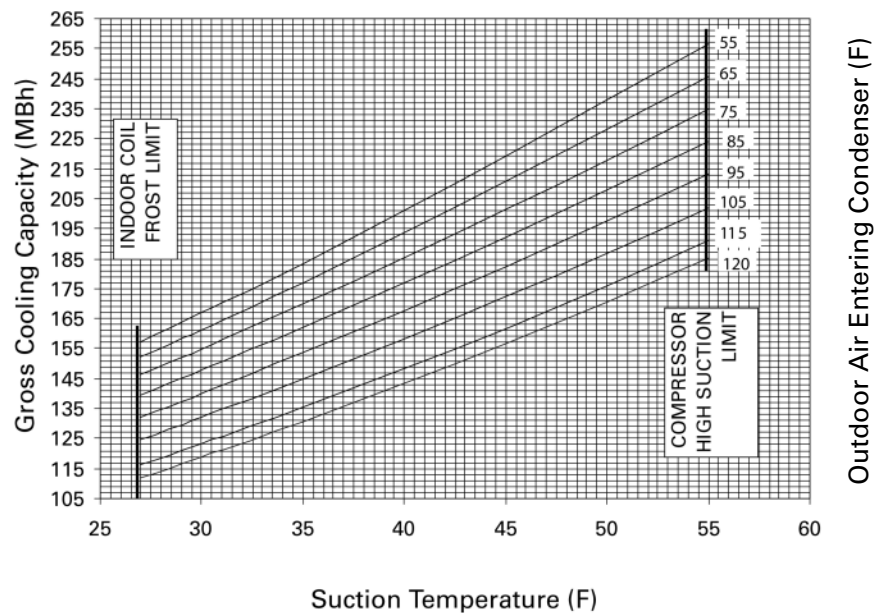
15 Ton

Table PD-9: Gross Cooling Capacities (MBh) 15 Ton TWA180B Heat Pump Only

Outdoor Temperature In Degrees F		Suction Temperature Degrees F					
		30	35	40	45	50	55
65	Head pressure PSIG	168	173	179	185	191	197
	Capacity BTUH/1000	161.3	177.1	193.6	210.6	228.1	245.8
	Unit KW	10.9	11.16	11.43	11.71	12.01	12.32
75	Head pressure PSIG	193	199	205	211	217	224
	Capacity BTUH/1000	154.9	169.9	185.5	201.5	218	234.8
	Unit KW	11.94	12.22	12.51	12.82	13.14	13.47
85	Head pressure PSIG	221	227	233	240	247	254
	Capacity BTUH/1000	147.7	162	176.8	192.1	207.8	224
	Unit KW	13.16	13.46	13.78	14.11	14.46	14.81
95	Head pressure PSIG	252	258	265	272	279	286
	Capacity BTUH/1000	140.1	153.7	167.8	182.4	197.5	213.1
	Unit KW	14.56	14.89	15.23	15.59	15.95	16.32
105	Head pressure PSIG	285	292	299	306	313	321
	Capacity BTUH/1000	131.9	144.8	158.2	172.2	186.8	202.1
	Unit KW	16.14	16.49	16.85	17.23	17.61	18
115	Head pressure PSIG	321	328	335	343	351	360
	Capacity BTUH/1000	123.3	135.5	148.3	161.8	176	190.9
	Unit KW	17.88	18.25	18.64	19.03	19.43	19.83

Performance data calculated at 15° F subcooling and 20% superheat and does not include capacity loss due to refrigerant lines.

Table PD-10: Capacity Curves 15 Ton TWA180B Heat Pump Only



Performance Data

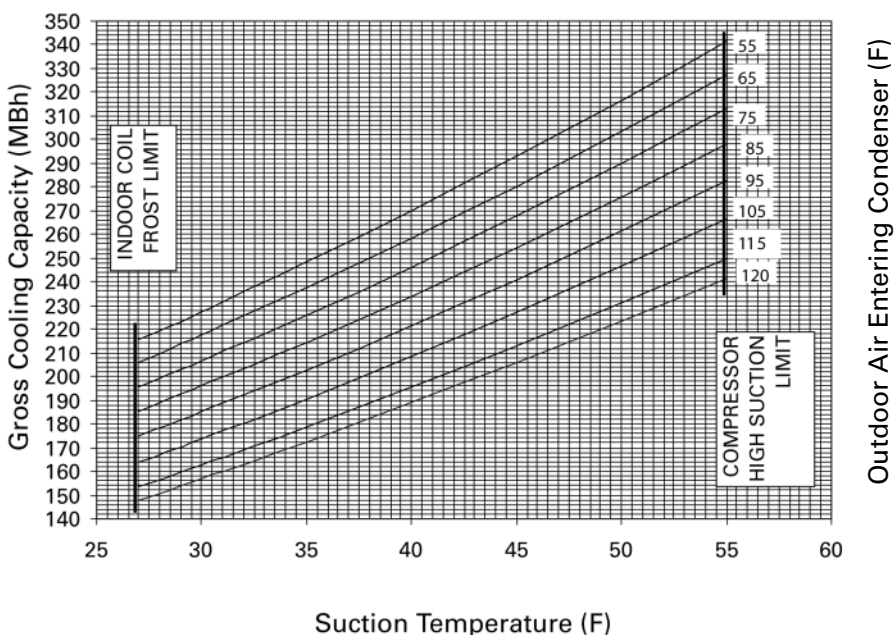
20 Ton

Table PD-11: Gross Cooling Capacities (MBh) 20 Ton TWA240B Heat Pump Only

Outdoor Temperature		Suction Temperature Degrees F					
In Degrees F		30	35	40	45	50	55
65	Head pressure PSIG	183	190	196	203	211	219
	Capacity BTUH/1000	217.4	237.4	258.4	280.5	303.5	327.5
	Unit KW	16.09	16.51	16.96	17.44	17.96	18.5
75	Head pressure PSIG	209	216	223	231	239	248
	Capacity BTUH/1000	206.8	226	246.3	267.6	290	313.3
	Unit KW	17.58	18.05	18.56	19.11	19.68	20.28
85	Head pressure PSIG	238	245	253	261	270	279
	Capacity BTUH/1000	196	214.4	233.9	254.5	276	298.3
	Unit KW	19.35	19.88	20.44	21.03	21.65	22.27
95	Head pressure PSIG	269	277	285	294	303	313
	Capacity BTUH/1000	185	202.6	221.3	240.9	261.4	282.6
	Unit KW	21.39	21.97	22.57	23.2	23.83	24.47
105	Head pressure PSIG	304	312	320	329	339	349
	Capacity BTUH/1000	173.8	190.6	208.4	227.1	246.5	266.5
	Unit KW	23.68	24.31	24.95	25.6	26.24	26.87
115	Head pressure PSIG	341	349	358	368	378	388
	Capacity BTUH/1000	162.4	178.5	195.4	213	231.2	249.9
	Unit KW	26.23	26.89	27.56	28.22	28.86	29.46

Performance data calculated at 15° F subcooling and 20% superheat and does not include capacity loss due to refrigerant lines.

Table PD-12: Capacity Curves 20 Ton TWA240B Heat Pump Only





Performance Data

7 1/2 Ton

Table PD-13: Gross Heating Capacities (MBh) 7 1/2 Ton TWA090A Heat Pump with 7 1/2 Ton TWE090A Air Handler at 3000 CFM

Outdoor Temperature in Degrees F	Heating Capacity (BTUH/1000) at				Total Power in Kilowatts at			
	Indicated Indoor Dry Bulb Temperature				Indicated Indoor Dry Bulb Temperature			
	60	70	75	80	60	70	75	80
-18	35.2	32	30.9	30.1	5.4	5.9	6.2	6.5
-13	36.8	34	33.1	32.5	5.5	6	6.3	6.6
-8	38.7	36.4	35.7	35.2	5.6	6.1	6.4	6.7
-3	41.1	39.2	38.7	38.3	5.7	6.2	6.5	6.8
2	44.1	42.5	42	41.8	5.8	6.3	6.6	6.9
7	47.5	46.3	45.9	45.7	5.9	6.5	6.8	7.1
12	51.3	50.3	50	49.9	6	6.6	6.9	7.2
17	55.6	54.8	54.5	54.3	6.2	6.7	7.1	7.4
22	60.3	59.6	59.3	59.1	6.3	6.9	7.2	7.6
27	65.5	64.7	64.4	64.2	6.4	7	7.4	7.7
32	71	70.2	69.9	69.6	6.6	7.2	7.5	7.9
37	76.7	75.8	75.4	75	6.7	7.4	7.7	8.1
42	82.7	81.7	81.2	80.7	6.9	7.5	7.9	8.3
47	89	87.8	87.3	86.7	7	7.7	8.1	8.5
52	95.7	94.4	93.7	93.1	7.2	7.9	8.3	8.7
57	102.7	101.2	100.5	99.7	7.3	8	8.4	8.9
62	109.9	108.2	107.4	106.6	7.5	8.2	8.6	9.1
67	117.3	115.5	114.6	113.8	7.7	8.4	8.8	9.3
72	124.8	122.9	122	121.1	7.9	8.6	9	9.5

Correction Factors — Other Airflows
(Table Value X Correction Factor = Value at New Airflow)

Airflow	2625	3375
Heating Capacity	.99	x 1.01
Compressor Kw	1.02	x 0.98

Values at ARI Rating Conditions of:
70 and 47/43 (High Temp. Point)
70 and 17/15 (Low Temp. Point)
Airflow = 3000 cfm

Heating Capacity (High Temp.) = 84000 Btuh
Heating Capacity (Low Temp.) = 53000 Btuh

Compressor Power (High Temp.) = 6.61 Kw
Compressor Power (Low Temp.) = 5.51 Kw
Coeff. of Perf. (High Temp) = 3.00
Coeff. of Perf. (Low Temp) = 2.28
Outdoor Fan Power = 550 Watts
Indoor Fan Power = 800 Watts

NOTE:
1. Rated with 25 feet of 1³/₈" suction and 1/2" liquid line.



Performance Data

10 Ton

Table PD-14: Gross Heating Capacities (MBh) 10 Ton TWA120A Heat Pump with 10 Ton TWE120A Air Handler at 4000 CFM

Outdoor Temperature in Degrees F	Heating Capacity (BTUH/1000) at				Total Power in Kilowatts at			
	Indicated Indoor Dry Bulb Temperature				Indicated Indoor Dry Bulb Temperature			
	60	70	75	80	60	70	75	80
-18	29.9	42.3	46.5	49.9	7.4	8.4	9	9.5
-13	39.4	47.5	50.6	53	7.7	8.6	9.1	9.6
-8	46.9	52.6	54.8	56.7	7.9	8.8	9.2	9.7
-3	53.7	57.8	59.4	60.7	8.1	9	9.4	9.9
2	60.3	63.1	64.2	65	8.3	9.1	9.6	10
7	66.9	68.6	69.2	69.7	8.5	9.3	9.7	10.2
12	73.4	74.3	74.6	74.7	8.7	9.5	9.9	10.3
17	80.2	80.3	80.2	80.2	8.9	9.6	10.1	10.5
22	87.1	86.6	86.3	86	9	9.8	10.2	10.7
27	94.2	93.2	92.6	92.2	9.2	10	10.4	10.9
32	101.7	100.2	99.5	98.9	9.4	10.2	10.6	11.1
37	109.1	107.2	106.4	105.6	9.5	10.4	10.9	11.4
42	116.7	114.4	113.5	112.7	9.7	10.6	11.1	11.6
47	124.6	122.1	121.1	120.1	9.9	10.8	11.3	11.9
52	132.8	130.1	129	127.9	10.1	11.1	11.6	12.1
57	141.1	138.3	137.1	136	10.4	11.3	11.9	12.4
62	149.6	146.7	145.3	144.1	10.6	11.6	12.1	12.7
67	158.3	155.2	153.8	152.5	10.9	11.9	12.4	13.1
72	167.4	164.1	162.6	161.2	11.2	12.2	12.8	13.4

Correction Factors — Other Airflows
(Table Value X Correction Factor = Value at New Airflow)

Airflow	3500	4500
Heating Capacity	.99	x 1.01
Compressor Kw	1.02	x 0.98

Values at ARI Rating Conditions of:
70 and 47/43 (High Temp. Point)
70 and 17/15 (Low Temp. Point)
Airflow = 4000 cfm

Heating Capacity (High Temp.) = 119000 Btuh
Heating Capacity (Low Temp.) = 79000 Btuh

Compressor Power (High Temp.) = 9.17 Kw
Compressor Power (Low Temp.) = 7.55 Kw
Coeff. of Perf. (High Temp) = 3.00
Coeff. of Perf. (Low Temp) = 2.32
Outdoor Fan Power = 1080 Watts
Indoor Fan Power = 1170 Watts

NOTE:
1. Rated with 25 feet of 1³/₈" suction and 1/2" liquid line.

Performance Data

15 Ton

Table PD-15: Gross Heating Capacities (MBh) 15 Ton TWA180B Heat Pump with 15 Ton TWE180B Air Handler at 6000 CFM

Outdoor Temperature in Degrees F	Heating Capacity (BTUH/1000) at				Total Power in Kilowatts at			
	Indicated Indoor Dry Bulb Temperature				Indicated Indoor Dry Bulb Temperature			
	60	70	75	80	60	70	75	80
18	71	65.3	63.5	62.2	11.6	12.6	13.1	13.5
-13	73.8	69	67.5	66.5	11.8	12.7	13.2	13.8
-8	77.4	73.4	72.2	71.5	11.9	12.9	13.5	14
-3	81.8	78.7	77.8	77.3	12.1	13.2	13.7	14.3
2	87	84.6	84	83.7	12.3	13.4	14	14.6
7	93.1	91.2	90.8	90.7	12.6	13.6	14.2	14.9
12	100	98.6	98.3	98.3	12.8	13.9	14.5	15.2
17	107.8	106.7	106.4	106.5	13	14.2	14.8	15.5
22	116.5	115.5	115.3	115.3	13.3	14.5	15.1	15.8
27	126	125.1	124.9	124.8	13.6	14.8	15.5	16.2
32	136.3	135.4	135.1	134.9	13.9	15.1	15.8	16.6
37	146.8	145.8	145.4	145	14.1	15.4	16.1	16.9
42	157.9	156.7	156.1	155.6	14.4	15.8	16.5	17.3
47	169.7	168.2	167.5	166.8	14.7	16.1	16.9	17.7
52	182.2	180.4	179.6	178.8	15.1	16.5	17.2	18.1
57	195.2	193.2	192.2	191.2	15.4	16.8	17.6	18.5
62	208.7	206.4	205.3	204.2	15.7	17.2	18	18.9
67	222.6	220	218.8	217.6	16.1	17.6	18.4	19.3
72	237	234.2	232.9	231.7	16.5	18	18.8	19.7

Correction Factors — Other Airflows
(Table Value X Correction Factor = Value at New Airflow)

Airflow	5250	6750
Heating Capacity	.99	x 1.01
Compressor Kw	1.02	x 0.98

Values at ARI Rating Conditions of:
70 and 47/43 (High Temp. Point)
70 and 17/15 (Low Temp. Point)
Airflow = 6000 cfm

Heating Capacity (High Temp.) = 168000 Btuh
Heating Capacity (Low Temp.) = 107000 Btuh

Compressor Power (High Temp.) = 13.32 Kw
Compressor Power (Low Temp.) = 11.06 Kw
Coeff. of Perf. (High Temp) = 3.00
Coeff. of Perf. (Low Temp) = 2.27
Outdoor Fan Power = 1100 Watts
Indoor Fan Power = 1700 Watts

NOTE:
1. Rated with 25 feet of 1³/₈" suction and 1/2" liquid line.



Performance Data

20 Ton

Table PD-16: Gross Heating Capacities (MBh) 20 Ton TWA240B Heat Pump with 20 Ton TWE240B Air Handler at 8000 CFM

Outdoor Temperature in Degrees F	Heating Capacity (BTUH/1000) at				Total Power in Kilowatts at			
	Indicated Indoor Dry Bulb Temperature				Indicated Indoor Dry Bulb Temperature			
	60	70	75	80	60	70	75	80
-18	64.1	89.6	97.7	103.6	14.7	17.1	18.3	19.4
-13	81.2	97.6	103.4	107.6	15.4	17.4	18.5	19.5
-8	94.5	106.1	110.1	113.1	15.9	17.8	18.8	19.8
-3	106.6	114.7	117.5	119.5	16.3	18.1	19.1	20.1
2	118.3	123.8	125.6	126.9	16.7	18.5	19.4	20.4
7	130.1	133.4	134.5	135.1	17.1	18.8	19.7	20.7
12	141.9	143.6	144	144.2	17.5	19.2	20.1	21.1
17	154.1	154.4	154.4	154.2	17.9	19.6	20.5	21.6
22	166.7	166	165.5	165	18.2	20	21	22
27	179.9	178.3	177.6	176.8	18.6	20.4	21.4	22.5
32	193.7	191.5	190.5	189.5	19	20.9	21.9	23.1
37	207.6	204.8	203.6	202.5	19.4	21.4	22.4	23.6
42	221.9	218.8	217.4	216.2	19.9	21.9	23	24.2
47	237	233.5	232	230.7	20.4	22.4	23.6	24.8
52	253	249.3	247.6	246.2	20.9	23	24.2	25.5
57	269.6	265.7	263.9	262.3	21.4	23.6	24.9	26.2
62	286.8	282.6	280.6	278.9	22	24.3	25.5	26.9
67	304.4	299.9	297.8	295.8	22.7	25	26.3	27.6
72	322.8	317.9	315.6	313.4	23.4	25.8	27	28.4

Correction Factors — Other Airflows
(Table Value X Correction Factor = Value at New Airflow)

Airflow	7000	9000
Heating Capacity	.99	x 1.01
Compressor Kw	1.02	x 0.98

Values at ARI Rating Conditions of:
70 and 47/43 (High Temp. Point)
70 and 17/15 (Low Temp. Point)
Airflow = 8000 cfm

Heating Capacity (High Temp.) = 232000 Btuh
Heating Capacity (Low Temp.) = 155000 Btuh

Compressor Power (High Temp.) = 18.08 Kw
Compressor Power (Low Temp.) = 15.00 Kw
Coeff. of Perf. (High Temp) = 3.00
Coeff. of Perf. (Low Temp) = 2.30
Outdoor Fan Power = 2150 Watts
Indoor Fan Power = 2300 Watts

NOTE:
1. Rated with 25 feet of 1³/₈" suction and 1/2" liquid line.

Performance Data

5 Ton

Table PD-17: Evaporator Fan Performance 5 Ton TWE060A, TWE060B - Air Handler

External Static Pressure (Inches of Water Gauge)																								
	.10"		.20"		.30"		.40"		.50"		.60"		.70"		.80"		.90"		1.00"		1.10"		1.20"	
CFM	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP
.75 HP Standard Motor and Field Supplied Low Static Drive							.75 HP Standard Motor and Sheaves																	
1600	578	0.34	625	0.38	676	0.43	727	0.48	778	0.52	828	0.57	879	0.62	930	0.67	963	0.70	995	0.74	1028	0.77	1060	0.8
1700	601	0.35	648	0.4	696	0.44	744	0.49	792	0.54	841	0.59	889	0.64	937	0.69	971	0.73	1005	0.77	1039	0.81	1073	0.84
1800	625	0.36	671	0.41	716	0.46	762	0.51	807	0.56	853	0.61	898	0.66	944	0.71	979	0.76	1015	0.8	1050	0.84	1085	0.88
1900	642	0.4	687	0.45	731	0.5	776	0.55	820	0.6	865	0.66	909	0.71	951	0.75	987	0.80	1023	0.84	1059	0.89	1095	0.93
2000	659	0.44	703	0.49	746	0.54	790	0.6	833	0.65	877	0.7	920	0.75	957	0.8	994	0.84	1031	0.89	1069	0.93	1106	0.98
2100	674	0.48	722	0.54	770	0.6	817	0.65	857	0.7	897	0.75	936	0.8	973	0.85	1009	0.89	1046	0.94	1082	0.99	1119	1.04
2200	689	0.52	741	0.59	793	0.65	845	0.71	881	0.76	917	0.8	953	0.85	989	0.9	1024	0.95	1060	1	1096	1.04	—	—
2300	710	0.57	761	0.63	812	0.7	863	0.76	897	0.81	932	0.86	966	0.91	1001	0.96	1035	1	—	—	—	—	—	—
2400	730	0.61	780	0.68	830	0.75	880	0.82	913	0.87	946	0.91	979	0.96	1013	1.01	—	—	—	—	—	—	—	—
														1 HP Oversized Motor and Sheaves										

Note:

1 Field Supplied Low Static Drive (use Table PD-18)

Data includes pressure drop due to wet coil and 1" filter.

Fan motor heat (MBh) = 3.15 x BHP.

Trane's factory supplied motors, in commercial equipment, are definite purpose motors, specifically designed and tested to operate reliably and continuously at all cataloged conditions. Using the full horsepower range of our fan motors as shown in our tabular data will not result in nuisance tripping or premature motor failure. Our product's warranty will not be affected.

Table PD-18: Low Static Fan Drive 5 Ton TWE060A, TWE060B Air Handler¹

Motor Sheave Turns Open	Nominal RPM
0	752
1	708
2	663
3	619
4	574
5	530

Note:

1 Field supplied components required:

Blower Sheave: Fixed Pitch (7.8 inch Pitch Diameter),

Blower Sheave: 0.625 inch Bore, Single Groove, "A" Belt.

Belt: A48



Performance Data

7 1/2 Ton

Table PD-19: Evaporator Fan Performance 7 1/2 Ton TWE090A, TWE090B - Air Handler

External Static Pressure (Inches of Water Gauge)																				
	.10"		.20"		.30"		.40"		.50"		.60"		.70"		.80"		.90"		1.00"	
CFM	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP
1.5 HP Standard Motor and Field Supplied Low Static Drive ¹					1.5 HP Standard Motor and Low Static Drive Kit										1.5 HP Standard Motor and Sheaves					
2400	429	0.45	475	0.51	522	0.58	569	0.65	615	0.71	662	0.78	708	0.84	755	0.91	783	0.98	811	1.05
2550	453	0.48	496	0.55	539	0.61	582	0.68	626	0.74	669	0.81	712	0.87	756	0.94	785	1	814	1.08
2700	476	0.52	516	0.58	556	0.65	596	0.71	636	0.77	676	0.83	716	0.9	758	0.96	787	1.02	816	1.11
2850	500	0.55	537	0.62	573	0.68	610	0.74	646	0.8	683	0.86	720	0.92	759	0.99	788	1.05	819	1.14
3000	524	0.59	557	0.65	590	0.71	624	0.77	657	0.83	690	0.89	723	0.95	760	1.01	790	1.07	821	1.17
3150	546	0.62	577	0.68	609	0.75	640	0.81	672	0.87	703	0.94	735	1.00	768	1.07	798	1.15	829	1.25
3300	568	0.65	598	0.72	628	0.79	657	0.85	687	0.92	717	0.99	746	1.05	776	1.12	807	1.22	837	1.33
3450	589	0.67	618	0.75	647	0.83	676	0.91	705	0.99	733	1.07	762	1.15	791	1.23	820	1.33	849	1.42
3600	611	0.69	639	0.79	666	0.88	694	0.97	722	1.06	750	1.16	778	1.25	806	1.34	834	1.43	862	1.51

Note:

1 Field Supplied Low Static Drive (use Table PD-21)

Data includes pressure drop due to wet coil and 1" filter.

Fan motor heat (MBh) = 3.15 x BHP.

Trane's factory supplied motors, in commercial equipment, are definite purpose motors, specifically designed and tested to operate reliably and continuously at all cataloged conditions. Using the full horsepower range of our fan motors as shown in our tabular data will not result in nuisance tripping or premature motor failure. Our product's warranty will not be affected.

Table PD-19: (Continued)

External Static Pressure (Inches of Water Gauge)															
1.10"		1.20"		1.30"		1.40"		1.50"		1.60"		1.70"		1.80"	
CFM	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP	RPM
1.5 HP Standard Motor and Sheaves															
2400	840	1.11	868	1.18	896	1.25	924	1.32	952	1.39	980	1.46	1009	1.52	1037
2550	843	1.15	872	1.23	901	1.31	930	1.38	959	1.46	988	1.54	1016	1.61	1045
2700	846	1.19	876	1.28	905	1.36	935	1.45	965	1.53	995	1.62	1024	1.7	1054
2850	849	1.23	880	1.33	910	1.42	941	1.51	971	1.6	1002	1.7	1032	1.79	1063
3000	853	1.27	884	1.37	915	1.48	946	1.58	978	1.68	1009	1.78	1040	1.88	1071
3150	860	1.35	891	1.45	922	1.56	958	1.66	984	1.76	1014	1.86	1044	1.94	—
3300	868	1.43	898	1.54	929	1.64	959	1.74	990	1.85	1020	1.95	1049	2.01	—
3450	879	1.52	908	1.61	937	1.71	966	1.8	995	1.9	1025	2	—	—	—
3600	890	1.6	918	1.69	945	1.78	973	1.87	1001	1.96	—	—	—	—	—
2 HP Oversized Motor and Sheaves															

Table PD-20: Low Static Fan Drive 7 1/2 Ton TWE090A,B Air Handler¹

Motor Sheave Turns Open	Nominal RPM
0	598
1	563
2	528
3	493
4	458
5	422

Table PD-21: Low Static Fan Drive Kit 7 1/2 Ton TWE090A,B Air Handler

Motor Sheave Turns Open	Nominal RPM
0	733
1	690
2	647
3	604
4	561
5	518

Note:

1 Field supplied components required:

Blower Sheave: Fixed Pitch (9.8 inch Pitch Diameter),

Blower Sheave: 1.00 inch Bore, Single Groove, "A" Belt.

Belt: A55

Performance Data

10 Ton

Table PD-22: Evaporator Fan Performance 10 Ton TWE120A1, TWE120B1 - Air Handler

External Static Pressure (Inches of Water Gauge)																										
.10"		.20"		.30"		.40"		.50"		.60"		.70"		.80"		.90"		1.00"		1.20"		1.40"		1.60"		
CFM	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP		
2 HP Standard Motor and Field Supplied Low Static Drive ¹														2 HP Standard Motor and Sheaves												
3200	—	—	—	—	570	0.67	603	0.75	636	0.83	670	0.91	703	1.00	736	1.08	756	1.14	784	1.2	838	1.32	890	1.49	942	1.66
3400	—	—	560	0.71	592	0.79	623	0.88	652	0.95	685	1.04	716	1.12	743	1.18	762	1.24	790	1.3	844	1.43	895	1.59	948	1.8
3600	557	0.77	583	0.84	613	0.92	643	1.01	667	1.07	700	1.16	730	1.23	750	1.27	768	1.34	797	1.41	850	1.55	900	1.69	954	1.94
3800	579	0.94	605	1.01	634	1.09	663	1.18	683	1.24	710	1.29	738	1.37	762	1.42	785	1.49	813	1.56	861	1.72	911	1.87	—	—
4000	602	1.11	628	1.17	656	1.26	683	1.35	698	1.4	720	1.43	747	1.5	773	1.58	801	1.64	829	1.71	872	1.89	922	2.04	—	—
4200	626	1.23	651	1.31	677	1.4	703	1.48	714	1.53	741	1.59	765	1.66	790	1.72	815	1.81	841	1.9	888	2.08	—	—	—	—
4400	649	1.36	674	1.45	698	1.53	723	1.62	729	1.65	761	1.76	784	1.81	807	1.87	830	1.98	852	2.09	—	—	—	—	—	—
4600	669	1.52	692	1.62	714	1.69	735	1.77	747	1.82	782	1.92	798	1.99	815	2.06	—	—	—	—	—	—	—	—	—	—
4800	689	1.69	711	1.79	729	1.85	746	1.92	764	1.98	802	2.09	—	—	—	—	—	—	—	—	—	—	—	—	—	—

Note:

1 Field Supplied Low Static Drive (use Table PD-23)

Data includes pressure drop due to wet coil and 1" filter.

Fan motor heat (MBh) = 3.15 x BHP.

Trane's factory supplied motors, in commercial equipment, are definite purpose motors, specifically designed and tested to operate reliably and continuously at all cataloged conditions. Using the full horsepower range of our fan motors as shown in our tabular data will not result in nuisance tripping or premature motor failure. Our product's warranty will not be affected.

**Table PD-23: Low Static Fan Drive 10 Ton
TWE120A1,B1 Air Handler¹**

Motor Sheave Turns Open	Nominal RPM
0	745
1	706
2	666
3	627
4	588
5	549

Note:

1 Field supplied components required:

Blower Sheave: Fixed Pitch (8.8 inch Pitch Diameter),

Blower Sheave: 1.00 inch Bore, Single Groove, "A" Belt.

Belt: A54



Performance Data

10 Ton

Table PD-24: Evaporator Fan Performance 10 Ton TWE120A3, AW; TWE120B3, BW - Air Handler

External Static Pressure (Inches of Water Gauge)																						
CFM	.10"		.20"		.30"		.40"		.50"		.60"		.70"		.80"		.90"		1.00"		1.20"	
	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP
					2 HP Standard Motor and Field Supplied Low Static Drive ¹										2 HP Standard Motor and Sheaves							
3200	—	—	—	—	570	0.67	603	0.75	636	0.83	670	0.91	703	1.00	736	1.08	756	1.14	784	1.2	838	1.32
3400	—	—	560	0.71	592	0.79	623	0.88	652	0.95	685	1.04	716	1.12	743	1.18	762	1.24	790	1.3	844	1.43
3600	557	0.77	583	0.84	613	0.92	643	1.01	667	1.07	700	1.16	730	1.23	750	1.27	768	1.34	797	1.41	850	1.55
3800	579	0.94	605	1.01	634	1.09	663	1.18	683	1.24	710	1.29	738	1.37	762	1.42	785	1.49	813	1.56	861	1.72
4000	602	1.11	628	1.17	656	1.26	683	1.35	698	1.40	720	1.43	747	1.5	773	1.58	801	1.64	829	1.71	872	1.89
4200	626	1.23	651	1.31	677	1.4	703	1.48	714	1.53	741	1.59	765	1.66	790	1.72	815	1.81	841	1.9	888	2.08
4400	649	1.36	674	1.45	698	1.53	723	1.62	729	1.65	761	1.76	784	1.81	807	1.87	830	1.98	852	2.09	904	2.27
4700	669	1.52	792	1.62	714	1.69	735	1.77	747	1.82	782	1.92	798	1.99	815	2.06	837	2.18	862	2.29	922	2.45
4800	689	1.69	711	1.79	729	1.85	746	1.92	764	1.98	802	2.09	812	2.17	822	2.24	844	2.39	872	2.48	939	2.64
3 HP Oversized Motor and Sheaves																						

Note:

1 Field Supplied Low Static Drive (use Table PD-25)

Data includes pressure drop due to wet coil and 1" filter.

Fan motor heat (MBh) = 3.15 x BHP.

Trane's factory supplied motors, in commercial equipment, are definite purpose motors, specifically designed and tested to operate reliably and continuously at all cataloged conditions. Using the full horsepower range of our fan motors as shown in our tabular data will not result in nuisance tripping or premature motor failure. Our product's warranty will not be affected.

Table PD-24: (Continued)

External Static Pressure (Inches of Water Gauge)												
	1.40"		1.60"		1.80"		2.00"		2.20"		2.40"	
CFM	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP
2 HP Standard Motor and Sheaves					3 HP Oversized Motor and Sheaves							
3200	890	1.49	942	1.66	1001	1.84	1051	2.03	1106	2.24	1162	2.44
3400	895	1.59	948	1.80	1009	1.98	1057	2.17	1111	2.37	1165	2.57
3600	900	1.69	954	1.94	1016	2.13	1065	2.31	1115	2.51	1167	2.7
3800	911	1.87	959	2.15	1024	2.35	1070	2.54	1120	2.73	1169	2.92
4000	922	2.04	965	2.36	1031	2.57	1077	2.76	1124	2.95	—	—
4200	941	2.29	984	2.54	1039	2.73	1083	2.91	1129	3.10	—	—
4400	960	2.53	1003	2.71	1047	2.89	1090	3.06	—	—	—	—
4600	979	2.67	1020	2.86	1061	3.06	—	—	—	—	—	—
4800	997	2.8	1036	3.02	—	—	—	—	—	—	—	—

**Table PD-25: Low Static Fan Drive 10 Ton
TWE120A3,AW; BE,BW Air Handler¹**

Motor Sheave Turns Open	Nominal RPM
0	745
1	706
2	666
3	627
4	588
5	549

Note:

1 Field supplied components required:

Blower Sheave: Fixed Pitch (8.8 inch Pitch Diameter),

Blower Sheave: 1.00 inch Bore, Single Groove, "A" Belt.

Belt: A54

Performance Data

15 Ton

Table PD-26: Evaporator Fan Performance 15 Ton TWE180B - Air Handler

External Static Pressure (Inches of Water Gauge)																						
CFM	.10"		.20"		.30"		.40"		.50"		.60"		.70"		.80"		.90"		1.00"		1.20"	
	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP
2 HP Standard Motor and Field Supplied Low Static Drive ¹																3 HP Standard Motor and Sheaves						
4500	637	1.4	662	1.44	687	1.49	701	1.53	717	1.58	732	1.63	747	1.64	754	1.65	782	1.67	817	1.76	873	1.96
4800	642	1.42	667	1.51	692	1.54	706	1.63	722	1.64	737	1.65	752	1.66	767	1.68	795	1.73	831	1.82	887	2.02
5100	647	1.45	672	1.52	697	1.57	713	1.66	726	1.68	740	1.70	761	1.72	783	1.77	811	1.85	843	1.96	900	2.19
5400	652	1.47	677	1.54	702	1.6	719	1.69	730	1.72	742	1.75	769	1.78	798	1.87	827	1.98	856	2.09	914	2.37
5700	653	1.48	679	1.56	706	1.67	725	1.75	741	1.80	758	1.84	786	1.92	815	2.02	843	2.14	872	2.27	932	2.57
6000	655	1.49	681	1.59	709	1.74	731	1.8	752	1.87	774	1.94	803	2.05	831	2.17	860	2.29	889	2.44	950	2.78
6300	658	1.51	687	1.63	716	1.79	741	1.89	765	1.98	792	2.09	823	2.22	853	2.35	883	2.49	913	2.64	974	2.96
6600	663	1.54	693	1.68	723	1.84	750	1.97	778	2.09	811	2.24	843	2.39	875	2.53	906	2.69	936	2.84	997	3.15
6900	670	1.62	700	1.77	735	1.98	767	2.15	799	2.29	832	2.44	865	2.61	900	2.79	934	2.98	967	3.16	1019	3.48
7200	677	1.7	707	1.86	747	2.12	785	2.33	819	2.49	853	2.65	888	2.83	926	3.05	963	3.27	997	3.49	1041	3.81
																5 HP Oversized Motor and Sheaves						

Note:

1 Field Supplied Low Static Drive (use Table PD-27)

Data includes pressure drop due to wet coil and 2" filter.

Fan motor heat (MBh) = 3.15 x BHP.

Trane's factory supplied motors, in commercial equipment, are definite purpose motors, specifically designed and tested to operate reliably and continuously at all cataloged conditions. Using the full horsepower range of our fan motors as shown in our tabular data will not result in nuisance tripping or premature motor failure. Our product's warranty will not be affected.

Table PD-26: (Continued)

External Static Pressure (Inches of Water Gauge)													
CFM	1.40"		1.60"		1.80"		2.00"		2.20"		2.40"		
	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP	
	3 HP Standard Motor and Sheaves		5 HP Oversized Motor and Sheaves										
4500	929	2.19	986	2.46	1035	2.74	1084	3.01	1132	3.28	—	—	
4800	943	2.29	999	2.56	1046	2.83	1095	3.11	1143	3.38	—	—	
5100	957	2.48	1012	2.76	1058	3.04	1105	3.31	1152	3.57	—	—	
5400	972	2.67	1024	2.96	1070	3.24	1116	3.51	—	—	—	—	
5700	990	2.89	1038	3.18	1083	3.46	1127	3.74	—	—	—	—	
6000	1008	3.11	1052	3.39	1096	3.68	1138	3.96	—	—	—	—	
6300	1025	3.3	1069	3.61	1113	3.92	1152	4.21	—	—	—	—	
6600	1042	3.49	1087	3.83	1130	4.16	—	—	—	—	—	—	
6900	1063	3.81	1107	4.15	1146	4.49	—	—	—	—	—	—	
7200	1085	4.14	1127	4.47	—	—	—	—	—	—	—	—	

Table PD-27: Low Static Fan Drive 15 Ton TWE180B Air Handler¹

Motor Sheave Turns Open	Nominal RPM
0	776
1	748
2	720
3	692
4	663
5	635
6	607

Note:

1 Field supplied components required:

Motor Sheave: Variable Pitch (4.3-5.5 inch Pitch Diameter), 0.875 inch Bore, Single Groove, "B" Belt.

Blower Sheave: Fixed Pitch (12.4 inch Pitch Diameter), 1.4375 inch Bore, Single Groove, "B" Belt.

Belt: B67



Performance Data

20 Ton

Table PD-28: Evaporator Fan Performance 20 Ton TWE240B - Air Handler

External Static Pressure (Inches of Water Gauge)																						
	.10"		.20"		.30"		.40"		.50"		.60"		.70"		.80"		.90"		1.00"		1.20"	
CFM	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP
					5 HP Standard Motor and Field Supplied Low Static Drive ¹								5 HP Standard Motor and Low Static Drive Kit									
6400	—	—	—	—	570	1.41	612	1.57	654	1.7	696	1.83	743	2.06	781	2.25	808	2.4	835	2.55	883	2.86
6800	—	—	—	—	593	1.58	635	1.74	677	1.90	722	2.08	762	2.29	794	2.46	820	2.61	846	2.76	894	3.07
7200	—	—	573	1.58	615	1.75	657	1.92	700	2.09	747	2.33	781	2.52	806	2.66	831	2.81	856	2.96	904	3.29
7600	—	—	603	1.84	651	1.98	694	2.15	731	2.38	766	2.57	795	2.74	819	2.88	844	3.02	869	3.17	919	3.55
8000	585	1.97	633	2.11	686	2.21	730	2.39	761	2.66	785	2.81	809	2.95	832	3.09	857	3.23	882	3.37	933	3.8
8400	619	2.2	657	2.35	710	2.54	752	2.73	778	2.94	801	3.09	823	3.23	848	3.39	873	3.55	899	3.71	947	4.14
8800	652	2.43	680	2.60	733	2.86	773	3.07	794	3.22	816	3.36	837	3.50	863	3.68	889	3.86	915	4.04	960	4.47
9200	682	2.76	723	2.98	760	3.19	790	3.37	811	3.52	834	3.68	858	3.84	884	4.01	909	4.2	932	4.4	975	4.83
9600	711	3.08	766	3.36	787	3.52	807	3.67	828	3.82	852	3.99	878	4.17	904	4.35	929	4.53	949	4.75	990	5.2
					5 HP Standard Motor and Sheaves								7.5 HP Oversized Motor and Sheaves									

Note:

1 Field Supplied Low Static Drive (use Table PD-30)

Data includes pressure drop due to wet coil and 2" filter.

Fan motor heat (MBh) = 3.15 x BHP.

Trane's factory supplied motors, in commercial equipment, are definite purpose motors, specifically designed and tested to operate reliably and continuously at all cataloged conditions. Using the full horsepower range of our fan motors as shown in our tabular data will not result in nuisance tripping or premature motor failure. Our product's warranty will not be affected.

Table PD-28: (Continued)

External Static Pressure (Inches of Water Gauge)															
1.40"		1.60"		1.80"		2.00"		2.20"		2.40"		2.60"			
CFM	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP	
5 HP Standard Motor and Sheaves							7.5 HP Oversized Motor and Sheaves								
6400	930	3.16	976	3.52	1021	3.89	1066	4.26	1111	4.62	1156	4.99	1201	5.36	
6800	941	3.4	986	3.78	1030	4.16	1075	4.55	1119	4.93	1164	5.31	—	—	
7200	951	3.65	995	4.04	1039	4.44	1083	4.84	1127	5.23	1171	5.63	—	—	
7600	963	3.94	1007	4.34	1050	4.75	1093	5.16	1136	5.57	1179	5.98	—	—	
8000	975	4.23	1018	4.65	1060	5.07	1103	5.49	1145	5.91	1187	6.34	—	—	
8400	989	4.57	1032	5.01	1074	5.44	1117	5.87	1159	6.31	1200	6.73	—	—	
8800	1002	4.92	1045	5.36	1087	5.81	1130	6.26	1172	6.70	—	—	—	—	
9200	1016	5.28	1058	5.73	1099	6.17	1141	6.62	1182	7.07	—	—	—	—	
9600	1030	5.65	1071	6.09	1111	6.54	1152	6.99	1192	7.43	—	—	—	—	

**Table PD-29: Low Static Fan Drive Kit
20 Ton TWE240B Air
Handler**

Motor Sheave Turns Open	Nominal RPM
0	857
1	831
2	805
3	779
4	753
5	727
6	701

**Table PD-30: Low Static Fan Drive 20
Ton TWE240B Air
Handler¹**

Motor Sheave Turns Open	Nominal RPM
0	712
1	686
2	660
3	634
4	609
5	583
6	557

Note:

1 Field supplied components required:

Motor Sheave: Variable Pitch (4.3-5.5 inch Pitch Diameter), 1.125 inch Bore, Single Groove, "B" Belt.

Blower Sheave: Fixed Pitch (13.4 inch Pitch Diameter), 1.4375 inch Bore, Single Groove, "B" Belt. Belt: B67

Performance Data

5 - 20 Ton

Table PD-31: Standard Motor and Sheave/Fan Speed (RPM) - Air Handler

Tons	Unit Model No.	Sheave Position						
		6 Turns Open	5 Turns Open	4 Turns Open	3 Turns Open	2 Turns Open	1 Turns Open	Closed
5	TWE060A1 TWE060B	—	714	773	833	892	952	1011
7 1/2	TWE090A ³ TWE090B ³	—	726	787	847	908	968	1029
10	TWE120A1, B1 ² TWE120A3, AW ³ TWE120B3, BW ³	—	702	760	819	877	936	994
15	TWE180B ³	760	795	831	866	902	937	—
20	TWE240B ⁴	862	894	926	958	990	1022	1054

Notes:

- 1 Factory setting is 3.0 turns open.
- 2 Factory setting is 4.0 turns open.
- 3 Factory setting is 4.5 turns open.
- 4 Factory setting is 6.0 turns open.

Table PD-32: Oversized Motor and Sheave/Fan Speed (RPM) - Air Handler

Tons	Unit Model No.	Sheave Position						
		6 Turns Open	5 Turns Open	4 Turns Open	3 Turns Open	2 Turns Open	1 Turns Open	Closed
5	TWE060A1 TWE060B TWE060A3, A4, AW TWE060B3, B4	—	828	897	966	1035	1104	1173
7 1/2	TWE090A1 TWE090A3, AW	—	845	915	986	1056	1127	1197
10	TWE120A1, B1 TWE120A3, AW1 TWE120B3, BW1 TWE120A3, AW2 TWE120B3, BW2	—	878	941	1004	1066	1129	1192
15	TWE180B	946	981	1016	1052	1087	1122	1157
20	TWE240B	—	991	1040	1091	1140	1190	1239

Notes:

- 1 High Static Motor with 6 1/2" Fan Sheave.
- 2 High Static Motor with 8' Fan Sheave.



Performance Data

5 - 20 Ton

Table PD-33: Electric Heat Discharge Plenum and Grille Airflow (CFM)

Tons	Unit Model No.	Electric Heater Model No.	Airflow (CFM)	
			Minimum	Maximum
5	TWE060A1, B1	BAYHTRL117A	2000	2400
	TWE060A3, B3	BAYHTRL315A	2000	2400
	TWE060A4, B4	BAYHTRL415A	2000	2400
7 1/2	TWE090A1, B1	BAYHTRL117A	3000	3600
		BAYHTRL123A	3375	3600
	TWE090A3, B3	BAYHTRL315A	2625	3600
		BAYHTRL325A	3000	3600
	TWE090A3, B3	BAYHTRL415A	2625	3600
10		BAYHTRL425A	2625	3600
	TWE120A1, B1	BAYHTRL117A	3500	4800
		BAYHTRL123A	4000	4800
	TWE120A3, B3	BAYHTRL315A	4000	4800
		BAYHTRL325A	3500	4800
15		BAYHTRL415A	3500	4800
		BAYHTRL425A	3500	4800
	TWE180B3	BAYHTRM330A	5250	7200
	TWE180B4	BAYHTRM430A	5250	7200
20	TWE240B3	BAYHTRM330A	7000	9600
	TWE240B4	BAYHTRM430A	7000	9600

Notes:

- 1 When wired for 460 Volt.
- 2 10 Ton with 6.5 inch sheave.
- 3 10 Ton with 8 inch sheave.

Table PD-34: Discharge Plenum and Grille Assembly Throw Distance (ft) - Air Handler

Unit Tons	Model No.	CFM	Louver Angle Deflection Position			
			Straight	20°	40°	55°
5	TWE060A	1600	42	31	26	20
		1800	46	37	29	22
		2000	48	43	33	24
		2200	51	50	36	25
		2400	54	57	39	29
	TWE090A	2400	52	43	35	29
		2700	55	48	38	31
		3000	58	53	42	32
		3300	62	57	46	35
		3600	66	60	50	37
	TWE120A	3200	56	46	38	30
		3600	62	51	42	33
		4000	66	57	47	35
		4400	71	62	52	38
		4800	76	67	56	42
15	TWE180B	4900	47	38	32	25
		5400	52	44	37	29
		6000	57	49	41	32
		6600	61	53	43	34
		7200	65	57	46	35
20	TWE240B	6400	56	46	38	30
		7200	62	51	42	33
		8000	66	57	47	35
		8800	71	62	52	38
		9600	76	67	56	42

Throw distance values are based on a terminal velocity of 75 FPM.

Throw distance values at other terminal velocities may be established by multiplying throw distances in the table above by throw factor:

Terminal Velocity		Throw Factor
50 FPM	x	1.50
100 FPM	x	.75
150 FPM	x	.50

Performance Data

5 - 20 Ton

Table PD-35: Static Pressure Drop Through Accessories (inches of water column)¹ - Air Handlers

Tons	Unit Model No.	CFM	Return Grille	Discharge Plenum and Grille ²	Electric Heaters (kW)			
					5-10	15-20	25-30	35-50
5		1600	0.12	0.21	0.08	0.08	0.14	—
	TWE060A	2000	0.18	0.33	0.13	0.13	0.19	—
	TWE060B	2400	0.28	0.47	0.19	0.19	0.37	—
7½		2400	0.08	0.27	0.03	0.06	0.08	0.12
	TWE090A	3000	0.13	0.4	0.06	0.12	0.17	0.23
	TWE090B	3600	0.18	0.58	0.08	0.16	0.24	0.32
10		3200	0.07	0.43	0.06	0.13	0.19	0.26
	TWE120A	4000	0.11	0.66	0.1	0.2	0.3	0.4
	TWE120B	4800	0.15	0.95	0.14	0.28	0.42	0.57
15		4800	0.09	0.23	0.03	0.03	0.06	0.08
	TWE180B	6000	0.15	0.34	0.06	0.06	0.12	0.17
		7200	0.2	0.49	0.08	0.08	0.16	0.24
20		6400	0.11	0.43	0.06	0.06	0.13	0.19
	TWE240B	8000	0.17	0.66	0.1	0.1	0.2	0.3
		9600	0.23	0.95	0.14	0.14	0.28	0.42

Notes:

1 Return air filter ESP included in Fan Performance Table data.

2 At louver opening angle of 42 degrees. For ESP at other angle openings, see accessory Installer's Guide.

Table PD-36: Auxiliary Electric Heat Capacity - Air Handler

Unit Model No.	Total kW	No. of Stages	Stage 1		Stage 2		Total	
			KW Input	BTUH Output	KW Input	BTUH Output	KW Input	BTUH Output
TWE060A3, A4, AW TWE060B3, B4	5.00	1	5.00	17,065	—	—	5.00	17,065
	9.96	1	9.96	33,993	—	—	9.96	33,993
	14.96	1	14.96	51,058	—	—	14.96	51,058
	24.92	2	14.96	51,058	9.96	33,993	24.92	85,051
TWE090,120A3,AW TWE120B3, BW TWE090B3	5.00	1	5.00	17,065	—	—	5.00	17,065
	9.96	1	9.96	33,993	—	—	9.96	33,993
	14.96	1	14.96	51,058	—	—	14.96	51,058
	24.92	2	14.96	51,058	9.96	33,993	24.92	85,051
TWE060,090,120A1 TWE060B1 TWE090B1 TWE120B1	5.76	1	5.76	19,659	—	—	5.76	19,659
	11.52	1	11.52	39,318	—	—	11.52	39,318
	17.28	1	17.28	58,977	—	—	17.28	58,977
	23.04	2	11.52	39,318	11.52	39,318	23.04	78,636
TWE090,120A1 TWE120B1	28.8	2	17.28	58,977	11.52	39,318	28.8	98,295
TWE090,120A3, AW TWE120B3, BW	34.88	2	19.92	67,987	14.96	51,058	34.88	119,045
	10.00	1	10.00	34,130	—	—	10.00	34,130
TWE180, 240B	19.92	1	19.92	67,987	—	—	19.92	67,987
	29.92	2	19.92	67,987	10.00	34,130	29.92	102,117
	49.84	2	29.92	102,117	19.92	67,987	49.84	170,104

Heaters are rated at 240V, 480V and 600V. For other than rated voltage, capacity = $\left(\frac{\text{Voltage}}{\text{Rated Voltage}}\right)^2 \times \text{Rated Capacity}$.



Controls

Thermostats - Two stage heating/cooling or one stage heating/cooling thermostats are available in either manual or automatic changeover.

Programmable Electronic Night Set-back Thermostat — Heating setback and cooling setup with 7-day, 5-1-1 programming capability. Available in 2 heating/cooling or 1 heating/cooling versions with automatic changeover.

Electrical Data

Table ED-1: Unit Wiring - Heat Pumps

Tons	Unit Model No.	Unit Operating Voltage Range	Minimum Circuit Ampacity	Maximum Fuse Size or Maximum Circuit Breaker ¹
7½	TWA090A3	187-253	34.5	50
	TWA090A4	414-506	18.1	25
	TWA090AW	518-632	14.5	20
10	TWA120A3	187-253	48.1	70
	TWA120A4	414-506	23.3	35
	TWA120AW	518-632	18.8	25
15	TWA180B3	187-253	62.7	80
	TWA180B4	414-506	32.9	45
	TWA180BW	518-632	26.3	35
20	TWA240B3	187-253	87.8	100
	TWA240B4	414-506	42.5	50
	TWA240BW	518-632	34.2	45

NOTES:

1 HACR type circuit breaker per NEC.

Table ED-2: Electrical Characteristics - Motors - 60 Cycle - Heat Pumps

Tons	Unit Model No.	Standard Evaporator Fan Motor						Oversized Evaporator Fan Motor					
		No.	Volts	Phase	Amps		No.	Volts	Phase	Amps			
					FLA	LRA				FLA (ea.)	LRA (ea.)		
7½	TWA090A3	1	208-230	3	25.1	182	1	208-230	1	3.1	8.1		
	TWA090A4	1	460	3	13.2	94.9	1	460	1	1.6	3.7		
	TWA090AW	1	575	3	10.6	70	1	575	1	1.2	3		
10	TWA120A3	1	208-230	3	33.7	278	1	208-230	1	6	17		
	TWA120A4	1	460	3	16.5	124	1	460	1	2.7	7		
	TWA120AW	1	575	3	13.4	92	1	575	1	2	5.7		
15	TWA180B3	2	208-230	3	25.1	182	2	208-230	1	3.1	8.1		
	TWA180B4	2	460	3	13.2	94.9	2	460	1	1.6	3.7		
	TWA180BW	2	575	3	10.6	70	2	575	1	1.2	3		
20	TWA240B3	2	208-230	3	33.7	278	2	208-230	1	6	17		
	TWA240B4	2	460	3	16.5	124	2	460	1	2.7	7		
	TWA240BW	2	575	3	13.4	92	2	575	1	2	5.7		



Electrical Data

Table ED-3: Unit Wiring - Air Handler

Tons	Minimum Unit Model No.	Maximum Fuse Unit Operating Voltage Range	Circuit Ampacity	Size or Maximum Circuit Breaker ³
5	TWE060A1,B1	187-253	7	15
	TWE060A3,B3	187-253	4	15
	TWE060A4,B4	414-506	2	15
	TWE060AW	518-632	2	15
7½	TWE090A1, B1	187-253	8	15
	TWE090A3, B3 ¹	187-253	7	15
	TWE090A4, B4 ²	414-506	4	15
	TWE090AW	518-632	4	15
10	TWE120A1,B1	187-253	11	15
	TWE120A3,B3 ¹	187-253	8	15
	TWE120A4,B4 ²	414-506	5	15
	TWE120AW,BW	518-632	4	15
15	TWE180B3	187-253	12	20
	TWE180B4	414-506	6	15
	TWE180BW	518-632	5	15
20	TWE240B3	187-253	19	30
	TWE240B4	414-506	9	15
	TWE240BW	518-632	7	15

NOTES:

- 1 When wired for 208-230 volt.
- 2 When wired for 460 volt.
- 3 HACR type circuit breaker per NEC.

Table ED-4: Electrical Characteristics - Motors - 60 Cycle - Air Handler

Tons	Unit Model No.	Standard Evaporator Fan Motor					Oversized Evaporator Fan Motor				
		No.	Volts	Phase	Amps		No.	Volts	Phase	Amps	
					FLA	LRA				FLA	LRA
5	TWE060A1, B1	1	208-230	1	5.6	45	1	208-230	1	6.3	45
	TWE060A3, B3	1	208-230	3	2.6	16.4	1	208-230	3	3.6	22
	TWE060A4, B4	1	460	3	1.3	8.2	1	460	3	1.8	11
	TWE060AW	1	575	3	1.3	6.6	1	575	3	1.7	10.8
7½	TWE090A1, B1	1	208-230	1	6.2	33	1	208-230	1	7.7	57.4
	TWE090A3, B3 ¹	1	208-230/460	3	5.0/2.5	34.3/17.0	1	208-230/460	3	6.0/3.4	49.0/27.5
	TWE090AW	1	575	3	3.1	15	1	575	3	2.6	17.5
10	TWE120A1,B1	1	208-230	1	8.3	57.4	1	208-230	1	—	—
	TWE120A3,B3 ¹	1	208-230/460	3	6.0/3.4	49.0/27.5	1	208-230/460	3	9.4/4.6	74.9/39.3
	TWE120AW,BW	1	575	3	2.6	17.5	1	575	3	5.4	37.3
15	TWE180B3	1	208-230	3	9.4	74.9	1	208-230	3	14.4	98
	TWE180B4	1	460	3	4.6	39.3	1	460	3	6.7	47
	TWE180BW	1	575	3	3.4	24.6	1	575	3	5.4	37.3
20	TWE240B3	1	208-230	3	14.5	98	1	208-230	3	18	122.8
	TWE240B4	1	460	3	6.7	47	1	460	3	9	61.4
	TWE240BW	1	575	3	5.4	37.3	1	575	3	7.2	49.8

NOTES:

- 1 Ships wired for 208-230/3/60. Field convertible to 460/3/60.

Electrical Data

Table ED-5: Unit Wiring with Electric Heat (Single Point Connection) - 5, 7 1/2 and 10 Ton Air Handlers

Heater Model No.	Maximum Fuse Heater KW Rating ¹	To Use With Unit	Unit Power Supply	Control Stages	Minimum Circuit Ampacity ²	or HACR Circuit Breaker Size ^{2, 6}
BAYHTRL106A	4.33/5.76			1	33/37	35/40
BAYHTRL112A	8.65/11.52	TWE060A1	208-230/1/60	1	59/67 ³	60/70
BAYHTRL117A	12.98/17.28	TWE060B1		1	88/97	90/100
BAYHTRL123A	17.30/23.04			2	111/127 ³	125/150
BAYHTRL106A	4.33/5.76			1	34/38	35/40
BAYHTRL112A	8.65/11.52			1	60/68 ³	60/70
BAYHTRL117A	12.98/17.28	TWE090A1	208-230/1/60	1	86/98	90/100
BAYHTRL123A	17.30/23.04	TWE090B1		2	112/128 ³	125/150
BAYHTRL129A	21.65/28.80			2	138/158 ³	150/175
BAYHTRL106A	4.33/5.76			1	31/41	40/45
BAYHTRL112A	8.65/11.52			1	63/73 ³	70/80
BAYHTRL117A	12.98/17.28	TWE120A1	208-230/1/60	1	89/101	90/110
BAYHTRL123A	17.30/23.08	TWE120B1		2	115/131 ³	125/150
BAYHTRL129A	21.65/28.80			2	141/161 ³	150/175
BAYHTRL305A	3.75/5.00			1	17/19	20/20
BAYHTRL310A	7.45/9.96	TWE060A3	208-230/3/60	1	30/34	30/35
BAYHTRL315A	11.25/14.96	TWE060B3		1	43/49	45/50
BAYHTRL325A	18.71/24.92			2	69/79 ³	70/80
BAYHTRL305A	3.75/5.00			1	20/22	20/25
BAYHTRL310A	7.45/9.96			1	33/37	35/40
BAYHTRL315A	11.25/14.96	TWE090A3	208-230/3/60	1	46/52	50/60
BAYHTRL325A	18.71/24.92	TWE090B		2	72/82 ³	80/90
BAYHTRL335A	26.20/34.88			2	97/112 ⁴	100/125
BAYHTRL305A	3.75/5.00			1	21/23	25/25
BAYHTRL310A	7.45/9.96			1	34/38	35/40
BAYHTRL315A	11.25/14.96	TWE120A3	208-230/3/60	1	47/53	50/60
BAYHTRL325A	18.71/24.92	TWE120B3		2	73/83 ³	80/90
BAYHTRL335A	26.20/34.88			2	98/113 ⁴	100/125
BAYHTRL405A	5			1	10	15
BAYHTRL410A	9.96	TWE060A4	460/3/60	1	17	20
BAYHTRL415A	14.96	TWE060B4		1	25	25
BAYHTRL425A	24.92			2	40	40
BAYHTRL405A	5			1	11	15
BAYHTRL410A	9.96			1	19	20
BAYHTRL415A	14.96	TWE090A35	460/3/60	1	26	30
BAYHTRL425A	24.92	TWE090B35		2	41	45
BAYHTRL435A	34.88			2	56	60
BAYHTRL405A	5			1	12	15
BAYHTRL410A	9.96			1	20	20
BAYHTRL415A	14.96	TWE120A35	460/3/60	1	27	30
BAYHTRL425A	24.92	TWE120B35		2	42	45
BAYHTRL435A	34.88			2	57	60
BAYHTRLW05A	5			1	8	15
BAYHTRLW10A	9.96			1	15	15
BAYHTRLW15A	14.96	TWE060AW	575/3/60	1	21	25
BAYHTRLW25A	24.92			2	33	35
BAYHTRLW05A	5			1	11	15
BAYHTRLW10A	9.96			1	17	20
BAYHTRLW15A	14.96	TWE090AW	575/3/60	1	23	25
BAYHTRLW25A	24.92			2	36	40
BAYHTRLW35A	34.88			2	48	50
BAYHTRLW05A	5			1	10	15
BAYHTRLW10A	9.96			1	16	20
BAYHTRLW15A	14.96	TWE120AW	575/3/60	1	22	25
BAYHTRLW25A	24.92	TWE120BW		2	35	35
BAYHTRLW35A	34.88			2	47	50

NOTES:

1 kW ratings are at: 208/240V for 208-230V air handlers.

- 480V for 460V air handlers
- 600V for 575V air handlers

For other than rated voltage, capacity = $\left(\frac{\text{Voltage}}{\text{Rated Voltage}}\right)^2 \times \text{Rated Capacity}$.

2 Any power supply and circuits must be wired and protected in accordance with local codes.

3 Field wire must be rated at least 75 C.

4 Field wire must be rated at least 90 C.

5 With motor field converted to 460V.

6 The HACR circuit breaker is for U.S.A. installations only.

Electrical Data

Table ED-6: Unit Wiring with Electric Heat (Single Point Connection) - 15 and 20 Ton Air Handlers

Heater Model No.	Heater KW Rating ¹	To Use With Unit	Unit Power Supply	Control Stages	Minimum Circuit Ampacity ²	Maximum Fuse or HACR Circuit Breaker Size ^{2,6}
BAYHTRM310A	7.50/10.00	TWE180B3	208-230/3/60	1	38/42	40/45
BAYHTRM320A	14.96/19.92			1	64/72	70/80
BAYHTRM330A	22.50/29.92			2	90/102	90/110
BAYHTRM350A	37.42/49.84			2	142/162 ⁴	150/175
BAYHTRM310A	7.50/10.00	TWE240B3	208-230/3/60	1	45/49	50/50
BAYHTRM320A	14.96/19.92			1	71/79	80/80
BAYHTRM330A	22.50/29.92			2	97/109	100/110
BAYHTRM350A	37.42/49.84			2	144/169 ⁴	150/175
BAYHTRM410A	10	TWE180B4	460/3/60	1	21	25
BAYHTRM420A	19.92			1	36	40
BAYHTRM430A	29.92			2	51	60
BAYHTRM450A	49.84			2	81	90
BAYHTRM410A	10	TWE240B4	460/3/60	1	24	25
BAYHTRM420A	19.92			1	34	40
BAYHTRM430A	29.92			2	54	60
BAYHTRM450A	49.84			2	84	90
BAYHTRMW10A	10	TWE180BW	575/3/60	1	17	20
BAYHTRMW20A	19.92			1	30	30
BAYHTRMW30A	29.92			2	42	45
BAYHTRMW50A	49.84			2	67	70
BAYHTRMW10A	10	TWE240BW	575/3/60	1	20	25
BAYHTRMW20A	19.92			1	32	35
BAYHTRMW30A	29.92			2	45	50
BAYHTRMW50A	49.84			2	70	80

NOTES:

1 kW ratings are at: 208/240V for 208-230V air handlers.

- 480V for 460V air handlers
- 600V for 575V air handlers

For other than rated voltage, capacity = $(\frac{\text{Voltage}}{\text{Rated Voltage}})^2 \times \text{Rated Capacity}$.

2 Any power supply and circuits must be wired and protected in accordance with local codes.

3 Field wire must be rated at least 75 C.

4 Field wire must be rated at least 90 C.

5 With motor field converted to 460V.

6 The HACR circuit breaker is for U.S.A. installations only.

Jobsite Connections

Wiring shown with dashed lines is to be furnished and installed by the customer. All customer-supplied wiring must be copper only and must conform to NEC and local electrical codes. Codes may require line of sight between disconnect switch and unit.

NOTE:

1. When electric heater accessory is used single point power entry or dual point power entry is field optional. Single point power entry option is through electric heater only.

TWA060/TWE060A

Field Wiring:

- A — 3 power wires. Line voltage for 3 phase; 2 wires for single phase.
- B — 3 power wires. Line voltage for 3 phase; 2 wires for single phase
- C — Heat pump thermostat: 6 wires, 24 volts.
 - Electric heat: add 2 additional wires, 24 volts.
- D — 2 wires, 24 volts.
 - Outdoor thermostat: add 1 additional wire per ODT, 24 volts.
 - Electric heat: add 1 additional wire, 24 volts.

(2) TW-048/TWE090B

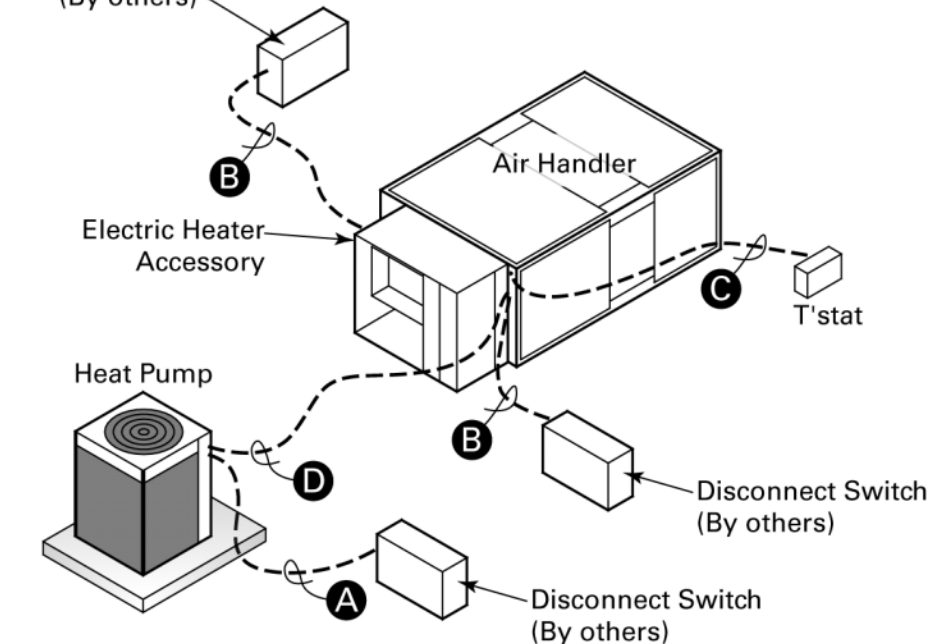
(2) TW-030/TWE060B

(2) TW-060/TWE120B

Field Wiring:

- A — 3 power wires. Line voltage for 3 phase; 2 wires for single phase.
- B — 3 power wires. Line voltage for 3 phase; 2 wires for single phase.
- C — Heat pump thermostat: 7 wires, 24 volts Electric Heat: add 2 additional wires, 24 volts.
- D — 5 wires, 24 volts to outdoor section "A" 2 wires, 24 volts to outdoor section "B" 2 wires, 24 volts between outdoor sections "A" "B"
 - Electric heat: add 1 additional wire, 24 volts.
 - Outdoor thermostat: add 1 additional wire, 24 volt.

Disconnect Switch
(By others)



TWA090A/TWE090A

TWA120A/TWE120A

Field Wiring:

- A — 3 power wires, line voltage.
- B — 3 power wires, line voltage for 3 phase; 2 wires for single phase.
- C — Heat pump thermostat: 6 wires, 24 volts.
 - Electric heat: add 2 additional wires, 24 volts.
- D — 6 wires, 24 volts.
 - Outdoor thermostat: add 1 additional wire, 24 volts.
 - Electric heat: add 1 additional wire, 24 volts.

(2) TWA090A/TWE180B

(2) TWA120A/TWE240B

Field Wiring:

- A — 3 power wires, line voltage.
- B — 3 power wires, line voltage.
- C — Heat pump thermostat: 7 wires, 24 volts.

- Electric heat: add 2 additional wires, 24 volts.
- D — 9 wires, 24 volts.
 - Electric heat: add 4 additional wires, 24 volts.
 - Outdoor thermostat: add 3 additional wires, 24 volts.

TWA180B/TWE180B

TWA240B/TWE240B

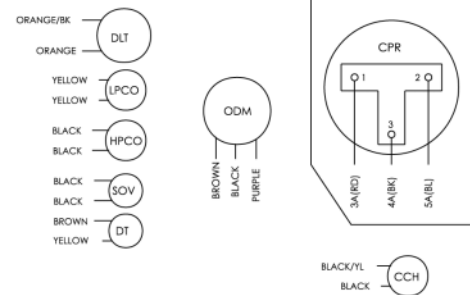
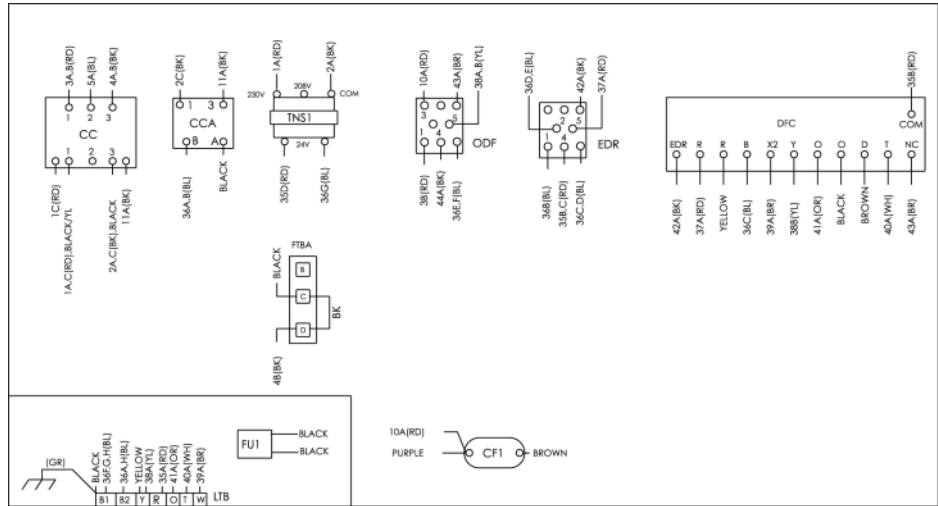
Field Wiring:

- A — 3 power wires, line voltage.
- B — 3 power wires, line voltage.
- C — Heat pump thermostat: 7 wires, 24 volts.
 - Electric heat: add 2 additional wires, 24 volts.
- D — 7 wires, 24 volts.
 - Electric heat: add 4 additional wires, 24 volts.
 - Outdoor thermostat: add 1 additional wire, 24 volts.

Typical Wiring Heat Pump

Heat Pump – Single Compressor

Typical unit wiring diagram. For specific wiring, see individual Service Facts.



NOTE
THREE PHASE MOTOR (S) FACTORY
SUPPLIED IN THIS EQUIPMENT.
PROTECTED UNDER PRIMARY
SINGLE-PHASE CONDITIONS

NOTES:

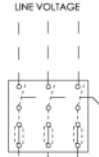
1. LOW VOLTAGE WIRING MUST BE 18 AWG MINIMUM.
2. MAXIMUM EXTERNAL LOW VOLTAGE LOAD 1.8 AMPS 24 V.A.C. DOES NOT INCLUDE ACCESSORIES BUT DOES INCLUDE INDOOR BLOWER RELAY.
3. SEE WIRING DIAGRAM WITH HEATER FOR DETAILS OF HEATER WIRING.
4. CONNECTIONS SHOWN ARE FOR 230V/60HZ/3PH. WHEN 208V/60HZ/3 PH OPERATION IS REQUIRED:
(A) AT TRANSFORMER, MOVE 1A(RD) LEAD FROM 230V TRANSFORMER TERMINAL TO 208V TERMINAL.
5. IF EVAPORATOR DEFROST CONTROL (EDC) IS USED, REMOVE JUMPER BETWEEN "B1" AND "B2".

C758704P01

Typical Wiring Heat Pump

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SEE UNIT
NAMEPLATE FOR
LINE VOLTAGE



⚠ WARNING
HAZARDOUS VOLTAGE !
DISCONNECT ALL ELECTRIC POWER INCLUDING REMOTE DISCONNECTS BEFORE SERVICING.
FAILURE TO DISCONNECT POWER BEFORE SERVICING CAN CAUSE SEVERE PERSONAL INJURY OR DEATH.

⚠ AVERTISSEMENT
VOLTAGE HASARDEUX !
DECONNECTEZ TOUTES LES SOURCES ELECTRIQUES INCLUANT LES DISJONCTEURS SITUÉS A DISTANCE AVANT D'EFFECTUER L'ENTRETIEN.
FAUTE DE DECONNECTER LA SOURCE ELECTRIQUE AVANT D'EFFECTUER L'ENTRETIEN PEUT ENTRAÎNER DES BLESSURES CORPORELLES SEVERES OU LA MORT.

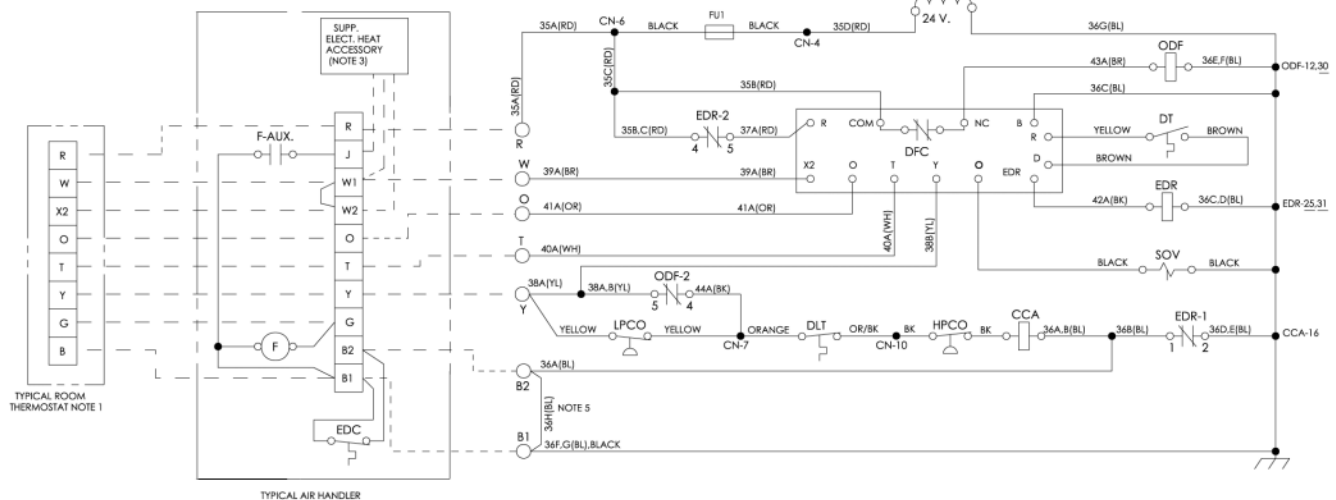
⚠ CAUTION
USE COPPER CONDUCTORS ONLY! UNIT TERMINALS ARE NOT DESIGNED TO ACCEPT OTHER TYPES OF CONDUCTORS. FAILURE TO DO SO MAY CAUSE DAMAGE TO THE EQUIPMENT.

DEVICE	DESCRIPTION	LINE
CC	COMPRESSOR CONTACTOR	16
CCA	COMPRESSOR RELAY AUX.	31
CCH	CRANKCASE HEATER	13
CF1	OUTDOOR FAN CAPACITOR	12
CN	CONNECTOR OR WIRE NUT	
CPR	COMPRESSOR	10
DFC	DEFROST CONTROL	26
DT	DEFROST TERMINATOR	25
EDC	EVAP. DEFROST CONTROL	34
EDR	EVAP. DEFROST RELAY	27
F	AIR HANDLER FAN CONTACTOR	31
FU	FUSE	22
FTB	FAN TERMINAL BLOCK	13-15
HPCO	HIGH PRESSURE CUTOFF	31
IOL	INTERNAL OVERLOAD	
LTB	LOW VOLTAGE TERMINAL BOARD	25-34
ODF	OUTDOOR FAN RELAY	23
ODM	OUTDOOR FAN MOTOR	13
LPCO	LOW PRESSURE CUTOFF	31
SOV	SWITCHOVER VALVE	29
TNS1	CONTROL POWER TRANSFORMER	20-21
DLT	DISCHARGE LINE THERMOSTAT	31

WIRE COLOR DESIGNATION			
ABBR	COLOR	ABBR	COLOR
BK	BLACK	PR	PURPLE
BL	BLUE	RD	RED
BR	BROWN	WH	WHITE
GR	GREEN	YL	YELLOW
OR	ORANGE		

UNIT FACTORY WIRED FOR 230V.
FOR 208V. SEE NOTE 4 AND
TABLE BELOW.

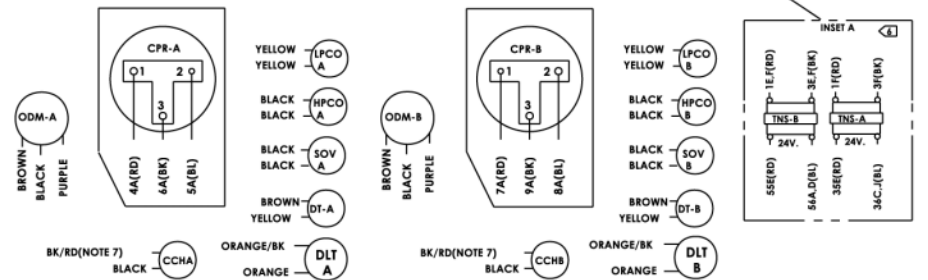
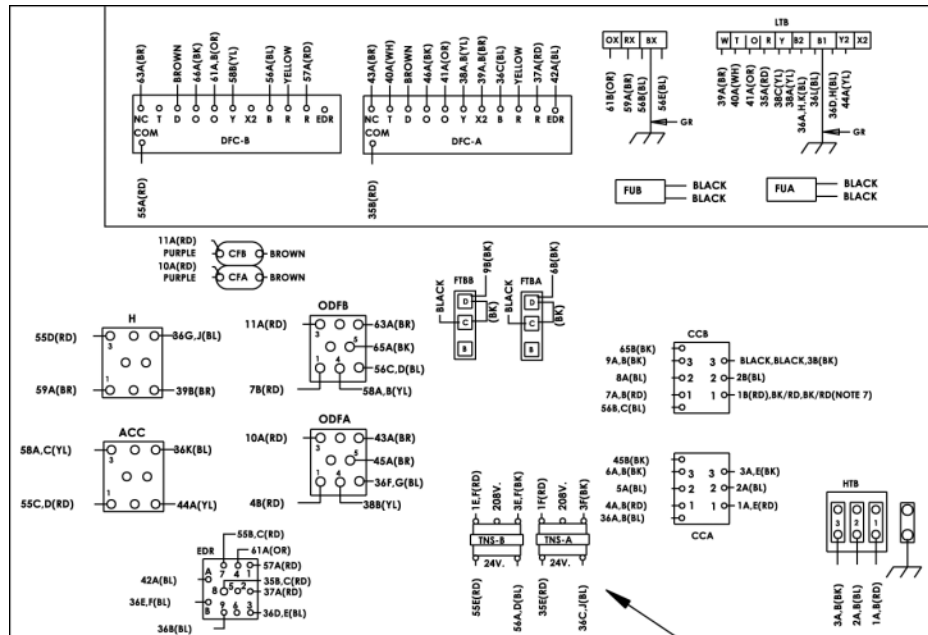
WIRE	FROM	TO
1A(RD)	TNS 230V	TNS 208V



Typical Wiring Heat Pump

Heat Pump – Dual Compressor

Typical unit wiring diagram. For specific wiring, see individual Service Facts.



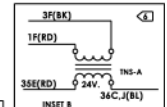
NOTE
THREE PHASE MOTOR (S) FACTORY
SUPPLIED IN THIS EQUIPMENT,
PROTECTED UNDER PRIMARY
SINGLE-PHASING CONDITIONS

NOTES:

1. LOW VOLTAGE WIRING MUST BE 18 AWG MINIMUM.
2. MAXIMUM EXTERNAL LOW VOLTAGE LOAD 24 V.A.C. (DOES NOT INCLUDE ACCESSORIES):
CKTA (TNSA) IS 1.6 AMPS
CKTB (TNSB) IS 2.3 AMPS
3. SEE WIRING DIAGRAM WITH HEATER FOR DETAILS OF HEATER WIRING.
4. CONNECTIONS SHOWN ARE FOR 230V/60HZ/3 PH. WHEN 208V/60HZ/3PH OPERATION IS REQUIRED:
(A) AT TRANSFORMER "A" AND "B" REMOVE 1E,F(RD) WIRE FROM TRANSFORMERS AND CONNECT TO 208V. TERMINAL ON TRANSFORMER.
5. IF EVAPORATOR DEFROST CONTROL (EDC) IS USED, REMOVE JUMPER BETWEEN "B1" AND "B2".
6. CONNECTIONS FOR THE 230V/3PH/60HZ UNIT ARE SHOWN. FOR 400V, 460V, AND 575V UNITS, SEE TRANSFORMER CONNECTIONS IN INSETS "A" AND "B".
7. ON ALL NOTE 7 REFERENCES, LEAD COLOR IS BK/RD ON TWA155BD/TWA180B4 MODELS, BK/BR ON TWA180BW MODEL, AND BK/YL ON TWA180B3 MODEL.

TWA155BD
TWA180B3
TWA180B4
TWA180BW

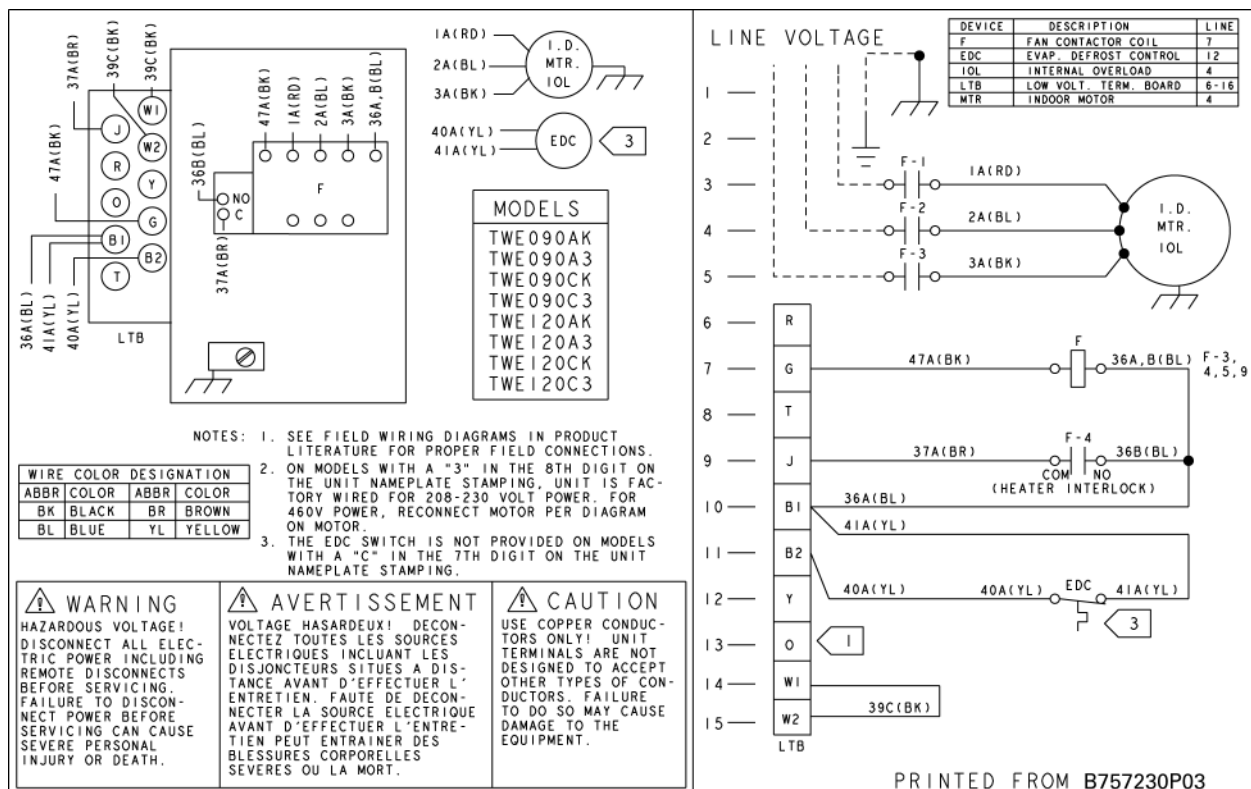
C757346P01



Typical Wiring Air Handler

Air Handler

Typical unit wiring diagram. For specific wiring, see individual Service Facts.

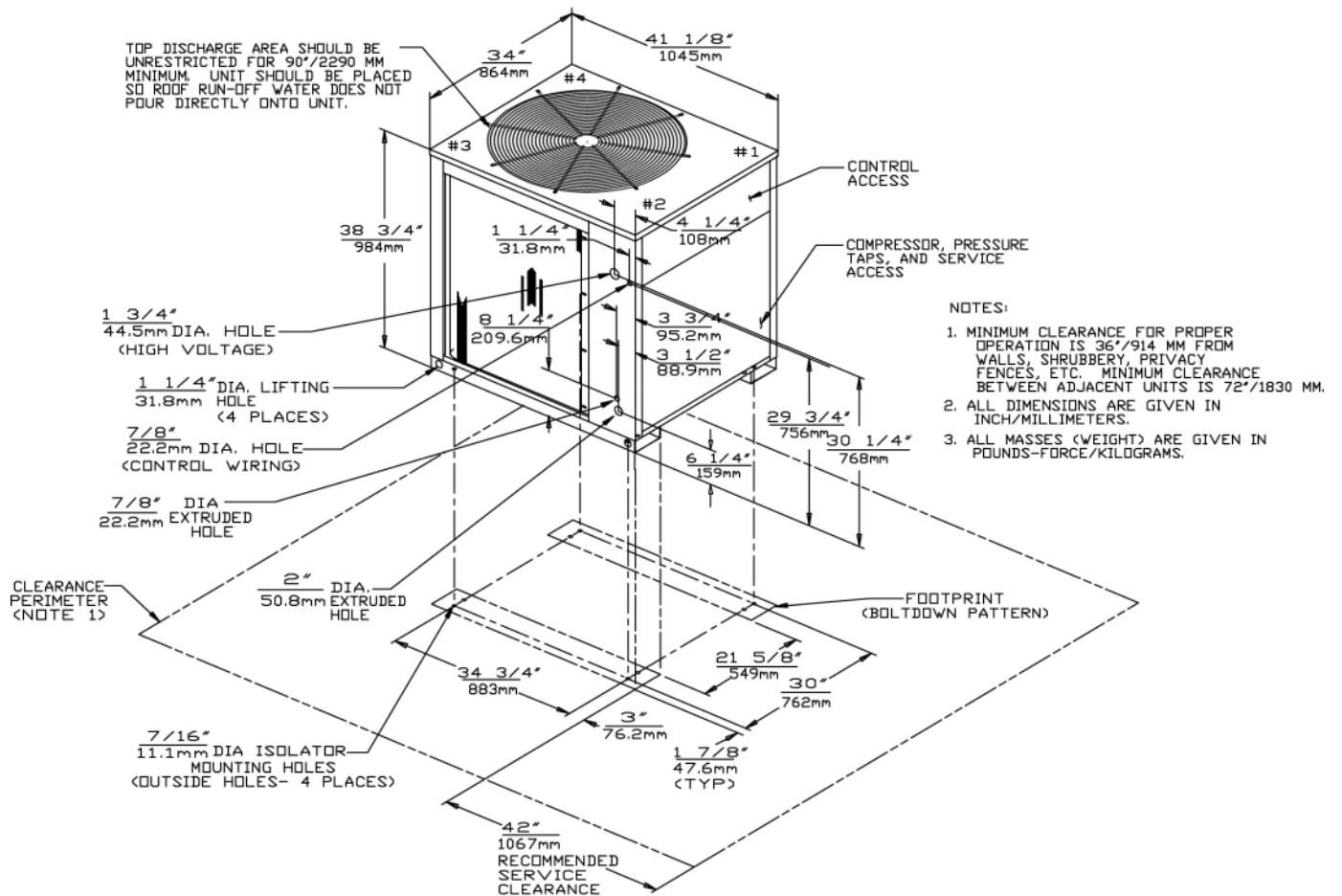


Dimensional Data

7 1/2 Ton

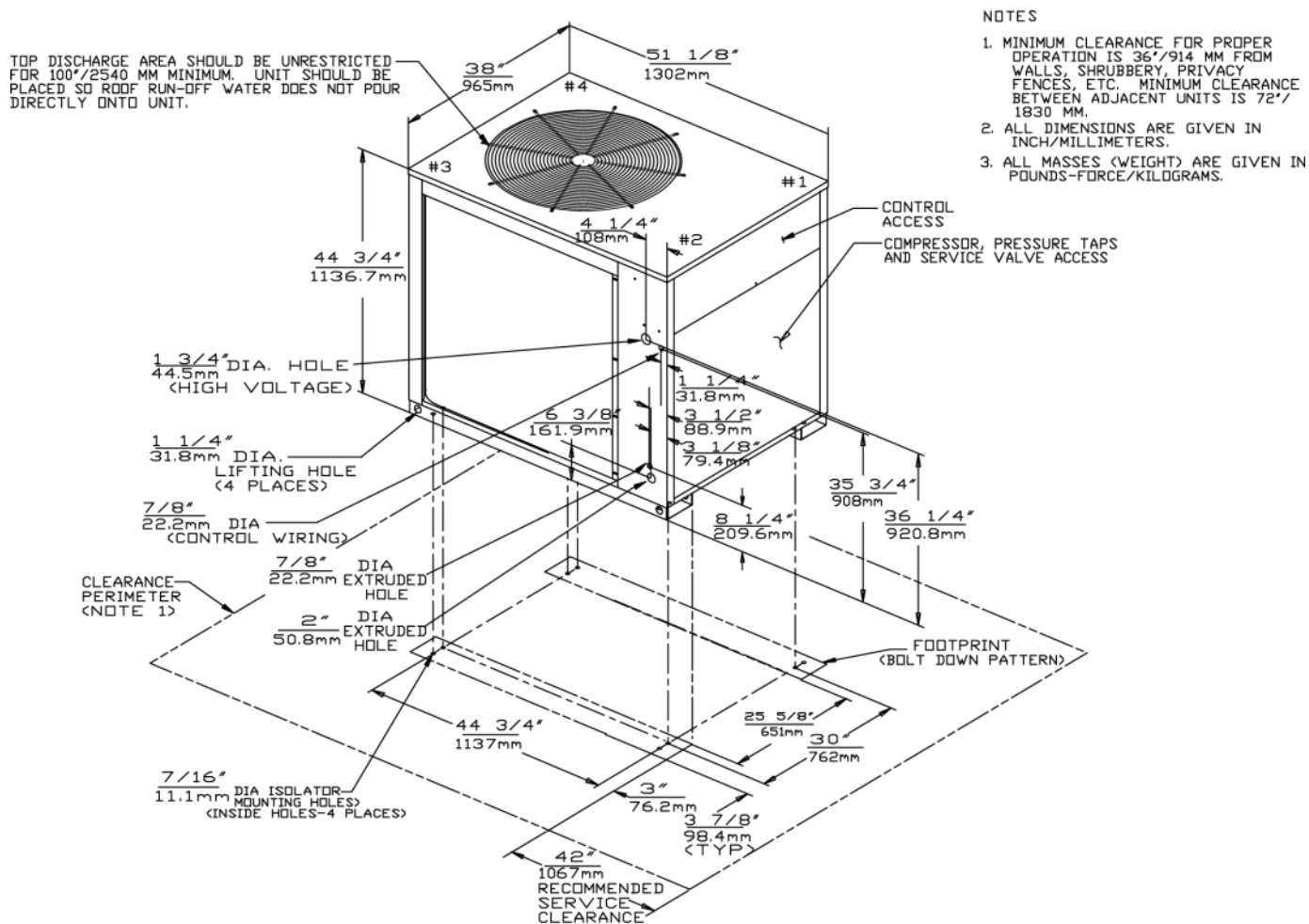
Figure DD-1 — 7½ Ton TWA090 Heat Pump

All dimensions are in inches.





All dimensions are in inches.

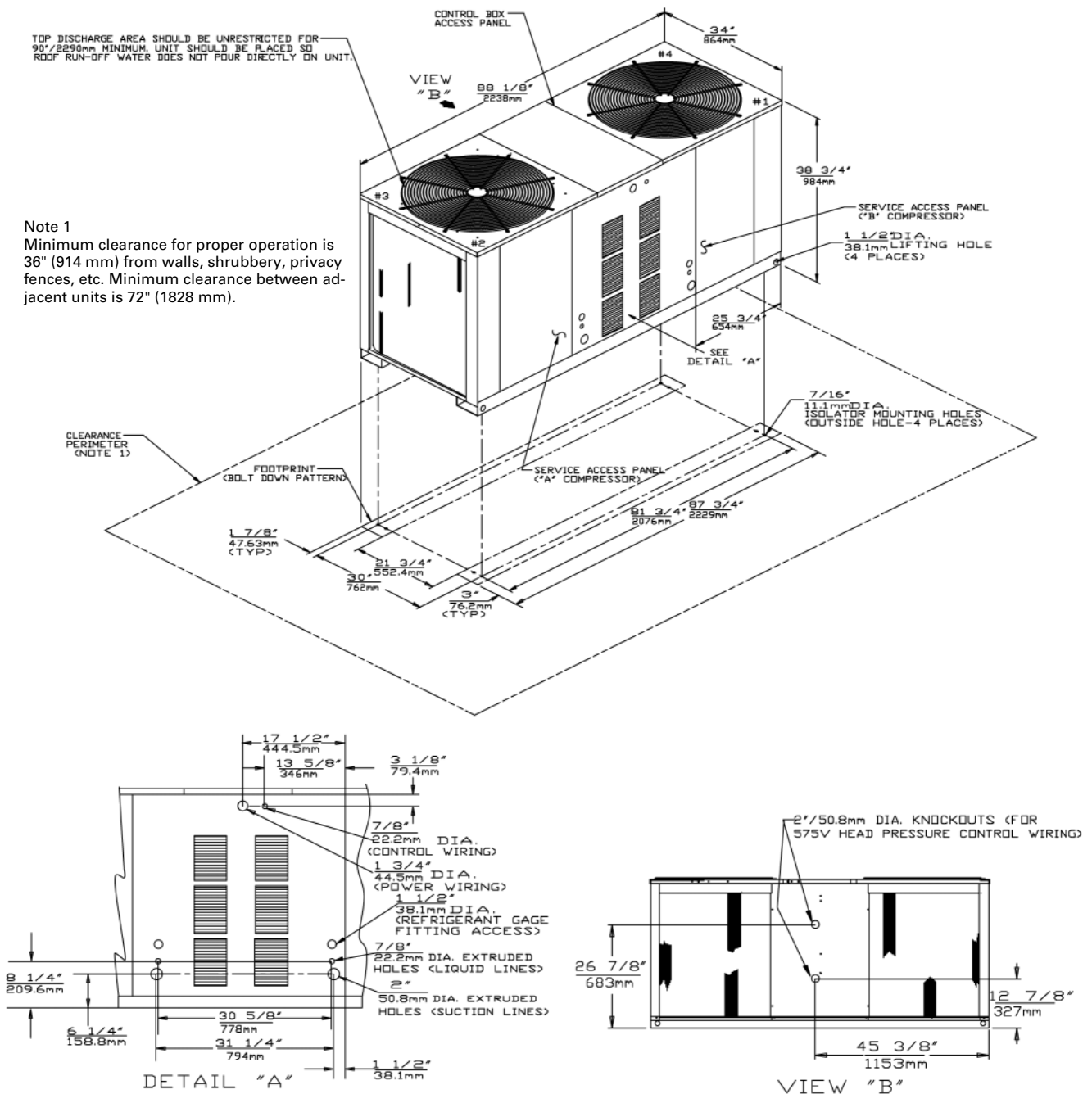


Dimensional Data

15 Ton

Figure DD-3 – 15 Ton TWA180B Heat Pump

All dimensions are in inches.



Dimensional Data

20 Ton

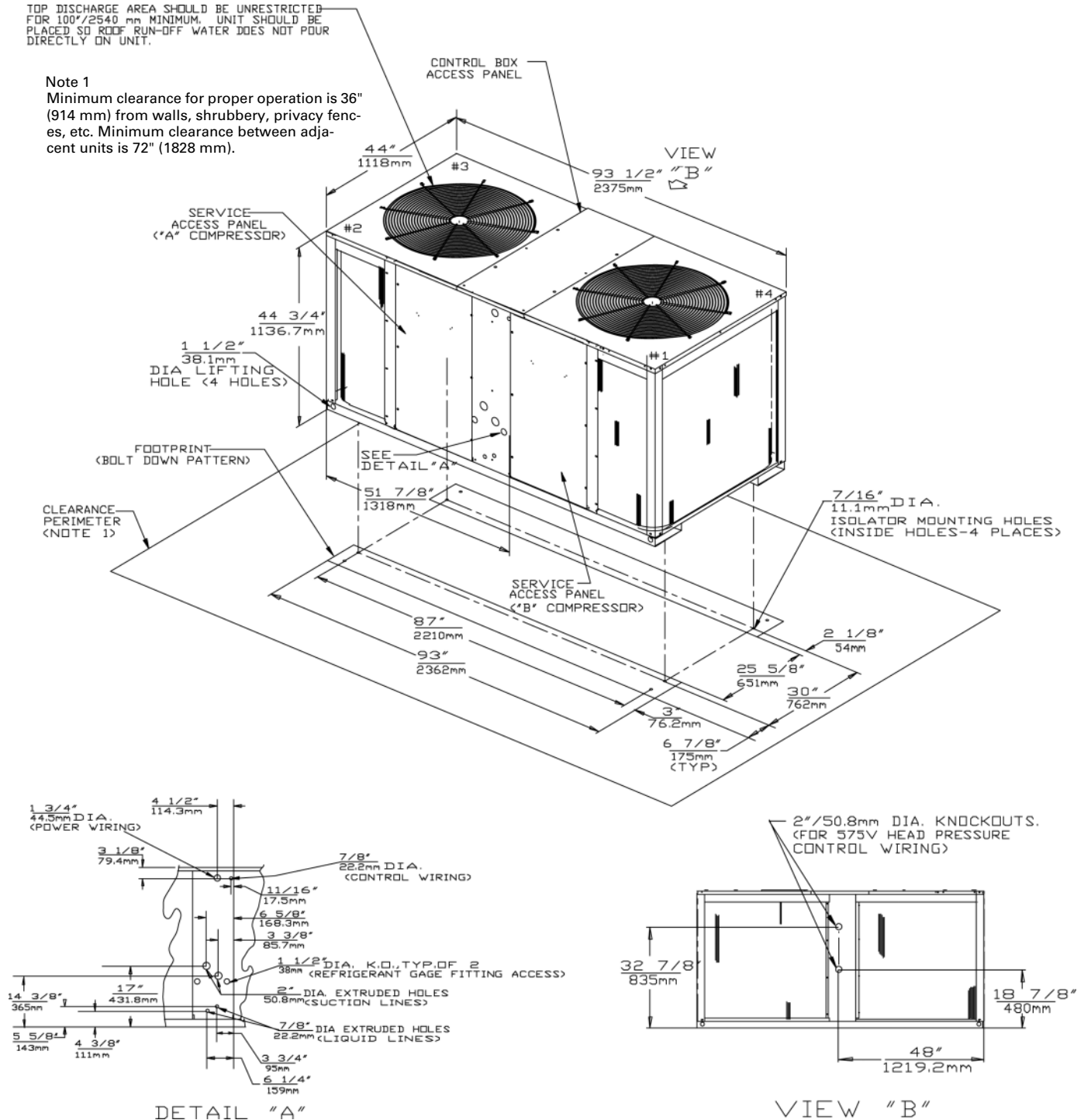
Figure DD-4 – 20 Ton TWA240B Heat Pump

All dimensions are in inches.

TOP DISCHARGE AREA SHOULD BE UNRESTRICTED FOR 100"/2540 mm MINIMUM. UNIT SHOULD BE PLACED SO ROOF RUN-OFF WATER DOES NOT POUR DIRECTLY ON UNIT.

Note 1

Minimum clearance for proper operation is 36" (914 mm) from walls, shrubbery, privacy fences, etc. Minimum clearance between adjacent units is 72" (1828 mm).

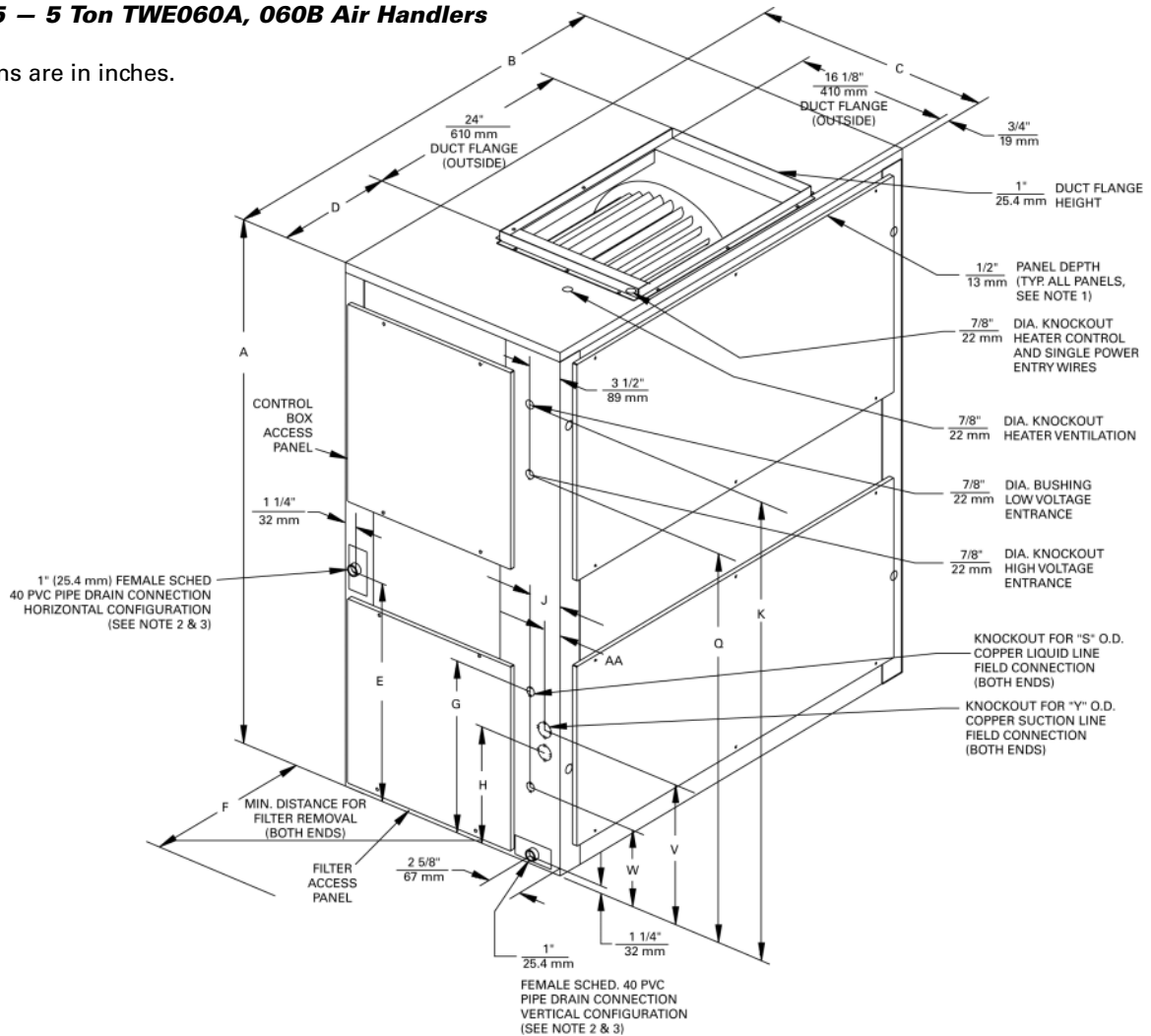


Dimensional Data

5 Ton

Figure DD-5 — 5 Ton TWE060A, 060B Air Handlers

All dimensions are in inches.



NOTE:

1. LENGTH, WIDTH, AND HEIGHT DIMENSIONS DO NOT INCLUDE 1/2" ACCESS PANEL DEPTH.
2. REMOVABLE DRAIN PAN AND ATTACHED DRAIN CONNECTION MAY BE INSTALLED ON EITHER END OF UNIT IN EITHER THE VERTICAL OR HORIZONTAL CONFIGURATION. PLASTIC DRAIN PAN ACCESS PLATE ON THE END OF UNIT OPPOSITE DRAIN CONNECTION MUST BE REMOVED TO SLIDE DRAIN PAN OUT OF UNIT FOR CLEANING. ACCESS PLATE MUST BE RE-INSTALLED AFTER SLIDING DRAIN PAN BACK INTO UNIT.
3. IF PERIODIC DRAIN PAN CLEANING IS REQUIRED, ALLOW ROOM FOR PARTIAL REMOVAL OF PAN OR DRAIN CONNECTION END OF UNIT.

Table DD-1 — Air Handler Dimensions (in.)

Tons	Model No.	A	B	C	D	E	F	G	H
5	TWE060A	48	38	22	8	19-1/2	26	15-7/8	14-1/8
5	TWE060B	48	38	22	8	19-1/2	26	16-1/4	13-1/4

Table DD-1 — (Continued)

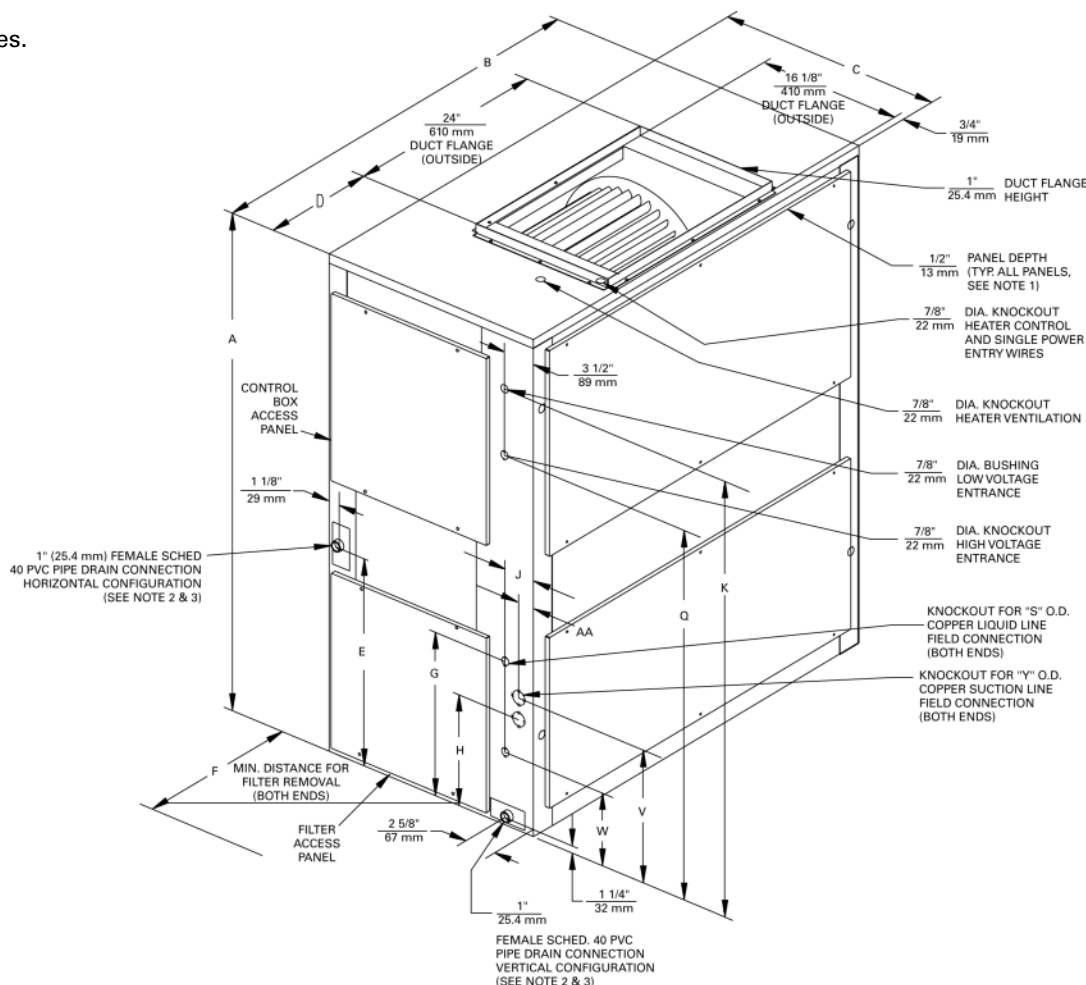
Tons	Model No.	J	K	Q	S	V	W	Y	AA
5	TWE060A	1-7/8	42-1/8	34-5/8	3/8	—	—	1-1/8	1-7/8
5	TWE060B	1-1/8	42-1/8	34-5/8	5/16	14-3/4	11-1/8	3/4	2

Dimensional Data

7 1/2, 10 Ton

Figure DD-6 – 7 1/2 & 10 Ton TWE090A, 120A; TWE 090B, 120B Air Handlers

All dimensions are in inches.



NOTE:

1. LENGTH, WIDTH, AND HEIGHT DIMENSIONS DO NOT INCLUDE 1/2" ACCESS PANEL DEPTH.
2. REMOVABLE DRAIN PAN AND ATTACHED DRAIN CONNECTION MAY BE INSTALLED ON EITHER END OF UNIT IN EITHER THE VERTICAL OR HORIZONTAL CONFIGURATION. PLASTIC DRAIN PAN ACCESS PLATE ON THE END OF UNIT OPPOSITE DRAIN CONNECTION MUST BE REMOVED TO SLIDE DRAIN PAN OUT OF UNIT FOR CLEANING. ACCESS PLATE MUST BE RE-INSTALLED AFTER SLIDING DRAIN PAN BACK INTO UNIT.
3. IF PERIODIC DRAIN PAN CLEANING IS REQUIRED, ALLOW ROOM FOR PARTIAL REMOVAL OF PAN OR DRAIN CONNECTION END OF UNIT.

Table DD-2 – Air Handler Dimensions (in.)

Tons	Model No.	A	B	C	D	E	F	G	H
7 1/2	TWE090A	54	47-1/2	25	11-3/4	22-3/8	22	—	17-3/4
7 1/2	TWE090B	54	47-1/2	25	11-3/4	22-3/8	22	20-1/8	16
10	TWE120A	54	63-12	25	19-3/4	22-3/8	22	—	17-3/4
10	TWE120B	54	63-1/2	25	19-3/4	22-3/8	22	20-1/8	16

Table DD-2 – (Continued)

Tons	Model No.	J	K	Q	S	V	W	Y	AA
7 1/2	TWE090A	4	45-1/4	38-1/8	1/2	—	15	1-3/8	2
7 1/2	TWE090B	2-1/8	45-1/4	38-1/8	3/8	18-3/4	14	1-1/8	2-1/8
10	TWE120A	4	45-1/4	38-1/8	1/2	—	15	1-3/8	2
10	TWE120B	2-1/8	45-1/4	38-1/8	3/8	18-3/4	14	1-1/8	2-1/8

Dimensional Data

5 - 10 Ton

Figure DD-7 — 5 - 10Ton TWE060A,090A,120A; TWE060B,090B,120B Air Handlers

All dimensions are in inches.

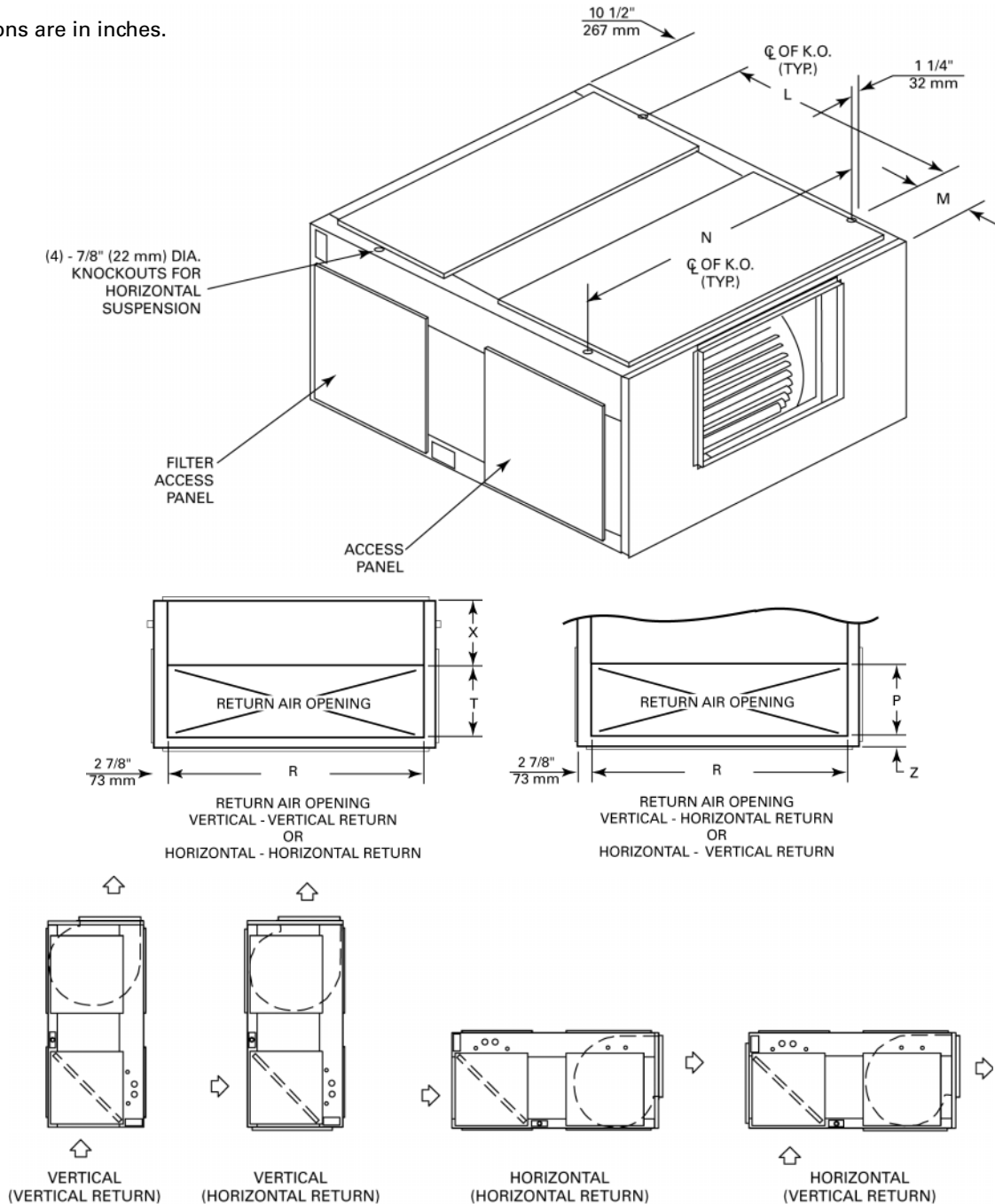


Table DD-3 — Air Handler Dimensions (in.)

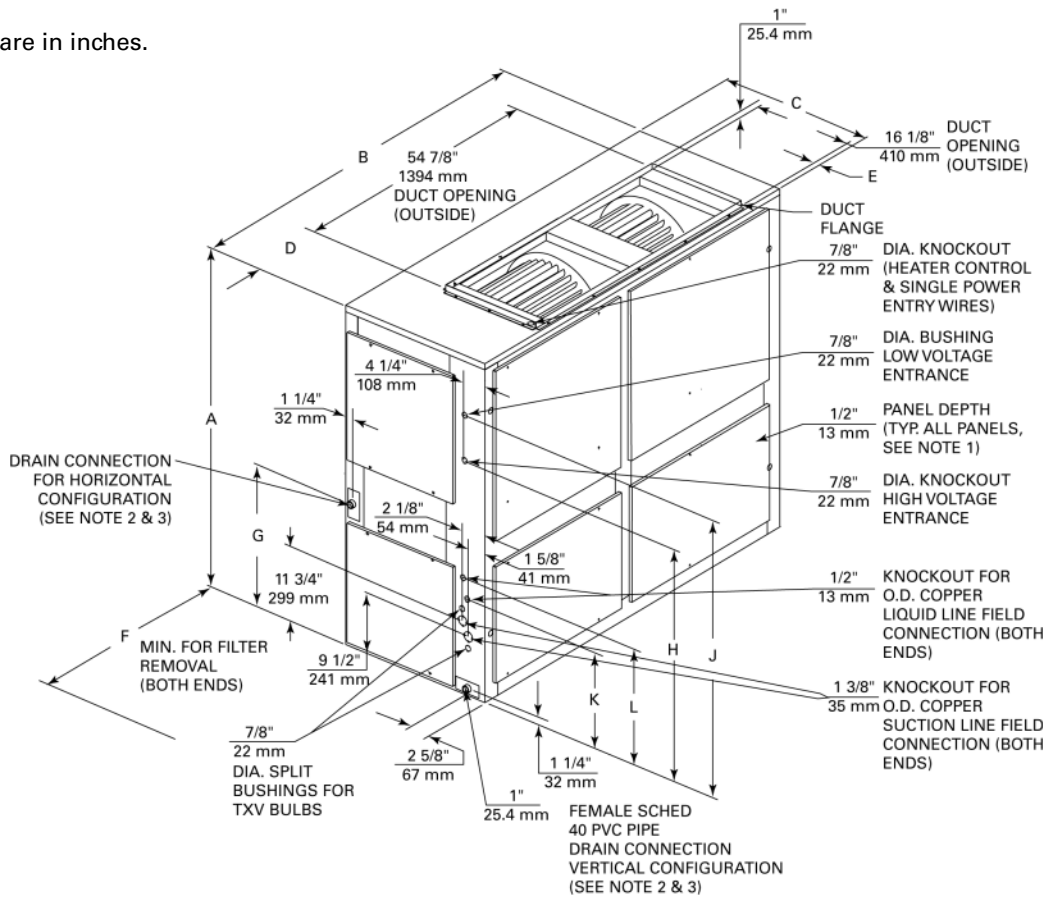
Tons	Model No.	L	M	N	P	R	T	X	Z
5	TWE060A,060B	34-5/8	2 7/8	35-5/8	12 1/4	32-1/4	12 1/2	7 5/8	2
7½	TWE090A, 090B	36-7/8	6 5/8	45-1/8	16-1/8	41-3/4	16-1/4	6 7/8	1 3/4
10	TWE120A, 120B	36-7/8	6 5/8	61-1/8	16-1/8	57-3/4	16-1/4	6 7/8	1 3/4

Dimensional Data

15, 20 Ton

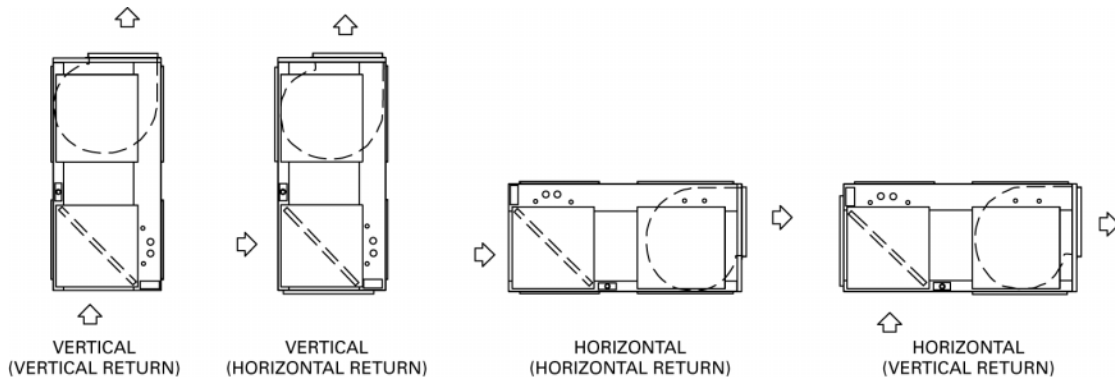
Figure DD-8 – 15 & 20 Ton TWE180 and 240B Air Handlers

All dimensions are in inches.



NOTE:

1. LENGTH, WIDTH, AND HEIGHT DIMENSIONS DO NOT INCLUDE 1/2" ACCESS PANEL DEPTH.
2. REMOVABLE DRAIN PAN AND ATTACHED DRAIN CONNECTION MAY BE INSTALLED ON EITHER END OF UNIT IN EITHER THE VERTICAL OR HORIZONTAL CONFIGURATION. PLASTIC DRAIN PAN ACCESS PLATE ON THE END OF UNIT OPPOSITE DRAIN CONNECTION MUST BE REMOVED TO SLIDE DRAIN PAN OUT OF UNIT FOR CLEANING. ACCESS PLATE MUST BE RE-INSTALLED AFTER SLIDING DRAIN PAN BACK INTO UNIT.
3. IF PERIODIC DRAIN PAN CLEANING IS REQUIRED, ALLOW ROOM FOR PARTIAL REMOVAL OF PAN OR DRAIN CONNECTION END OF UNIT.



Dimensional Data

15, 20 Ton

Figure DD-9 – 15 & 20 Ton TWE180 and 240B Air Handlers

All dimensions are in inches.

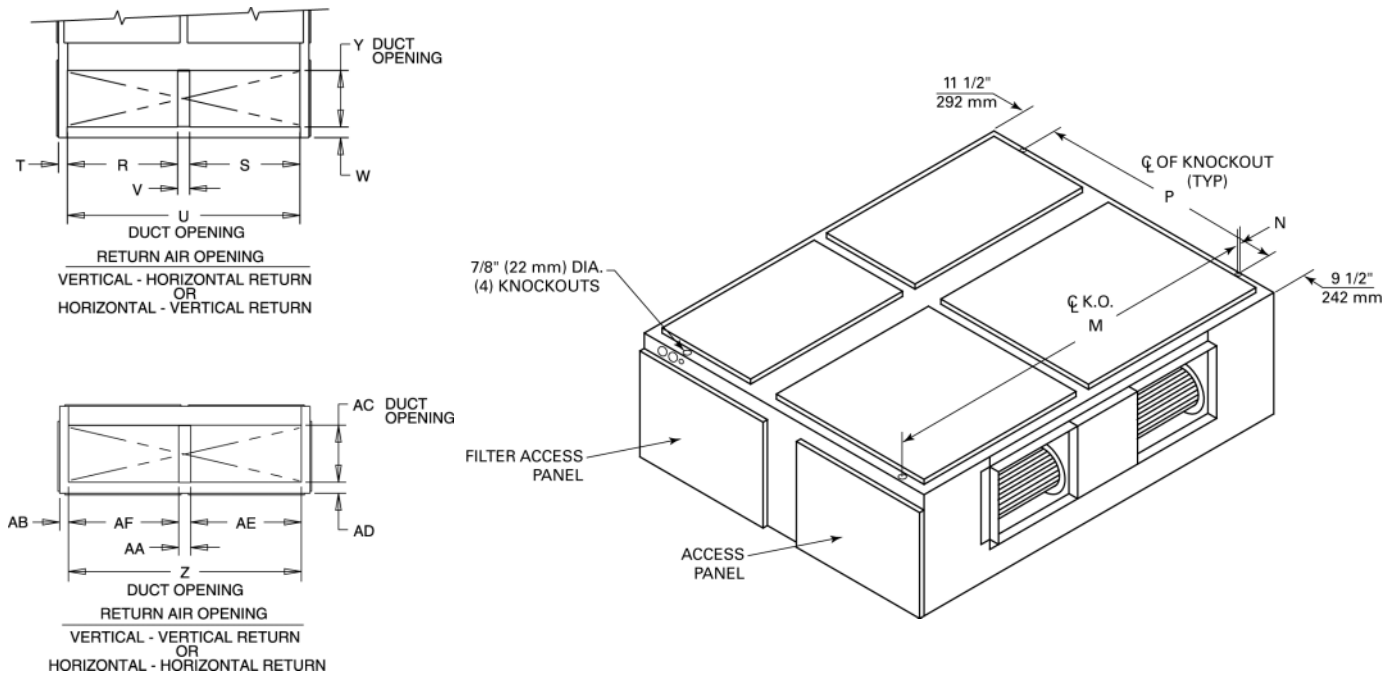


Table DD-4 – Air Handler Dimensions (in.)

Tons	Model No.	A	B	C	D	E	F	G	H	J	K
15	TWE180B	69	79-1/2	27-5/8	12-3/8	1-5/8	26	25-1/8	49-1/8	56-1/4	15-1/2
20	TWE240B	71-7/8	92-1/2	30-1/2	18-7/8	4-1/2	31	28	51-7/8	59-1/8	18-1/8

Table DD-4 – (Continued)

Tons	Model No.	L	M	N	P	R	S	T	U	V	W
15	TWE180B	19-1/2	77-1/4	1 1/4	48	35	35	2-7/8	73-7/8	3-3/4	3-3/8
20	TWE240B	20-7/8	89-1/4	1 3/4	50-7/8	39-1/8	39-1/8	4-7/8	82-7/8	4-5/8	3-1/8

Table DD-4 – (Continued)

Tons	Model No.	Y	Z	AA	AB	AC	AD	AE	AF
15	TWE180B	18	73-7/8	3-3/4	2-7/8	18	3-5/8	35	35
20	TWE240B	20-1/8	82-7/8	4-5/8	4-7/8	20-1/8	3	39-1/8	39-1/8

Dimensional Data

Accessories

Figure DD-10 – Electric Heater for 5, 7 1/2 and 10 Ton Air Handlers

All dimensions are in inches.

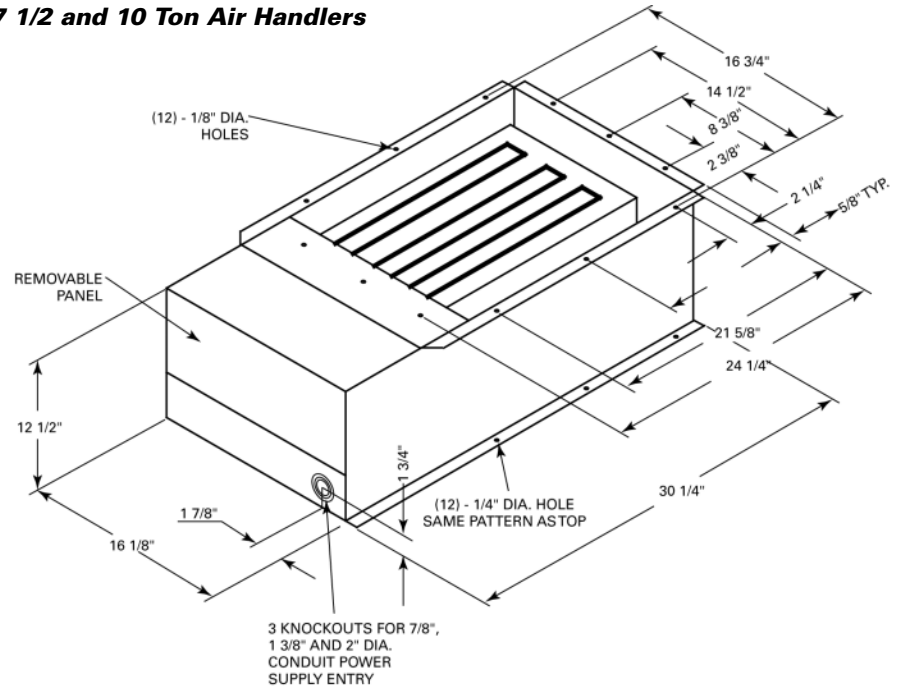
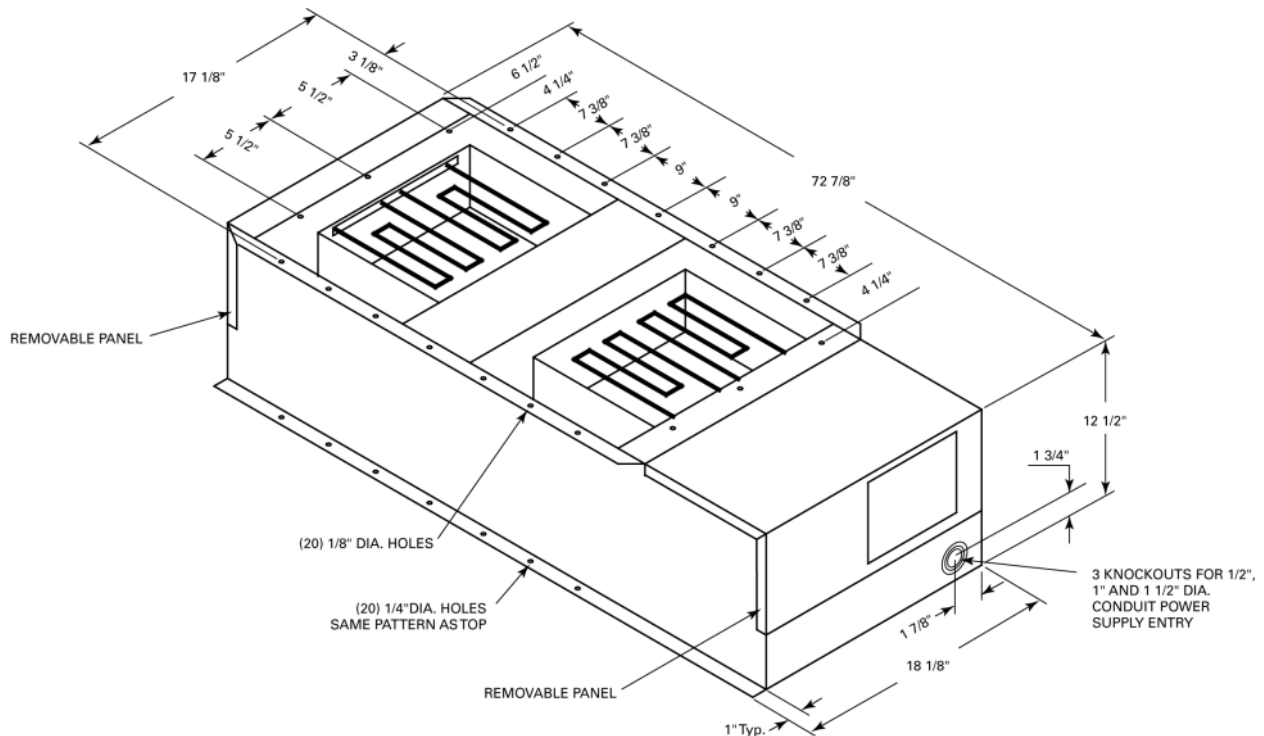


Figure DD-11 – Electric Heater for 15 and 20 Ton Air Handlers

All dimensions are in inches.



Dimensional Data

Accessories

Figure DD-12 – Discharge Plenum and Grille

Table DD-5 – Discharge Plenum and Grille Dimensions (in.) - No Heat

Tons	Model No.	A	B	C
5	BAYPLNM015	37-15/16	21-15/16	28
7½	BAYPLNM016	47-1/2	25	28
10	BAYPLNM017	63-1/2	25	28

Table DD6 – Discharge Plenum and Grille Dimensions (in.) For Use w/ Electric Heat

Tons	Model No.	A	B	C
5	BAYPLNM025	37-15/16	21-15/16	29
7½	BAYPLNM026	47-1/2	25	29
10	BAYPLNM027	63-1/2	25	29
15	BAYPLNM028	79-1/2	27-11/16	35
20	BAYPLNM029	92-1/2	30-7/16	35

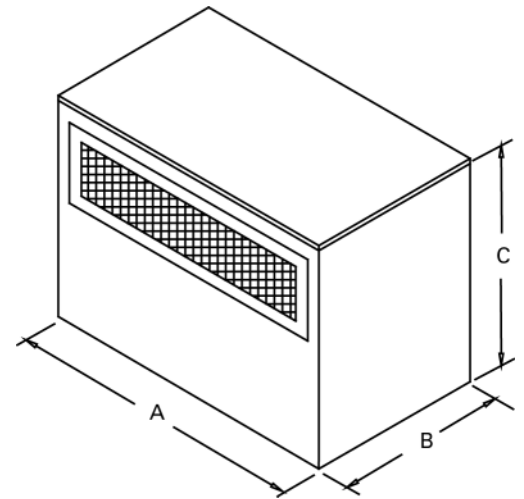
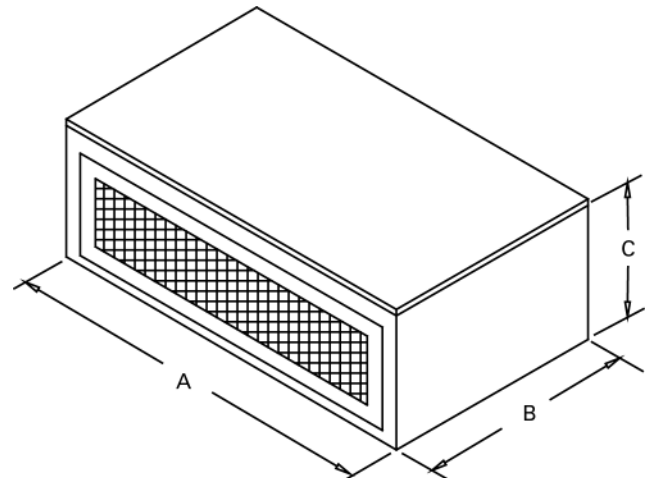


Figure DD-13 – Discharge Plenum and Grille

Table DD7 – Discharge Plenum and Grille Dimensions (in.) - No Heat

Tons	Model No.	A	B	C
15	BAYPLNM018	79-1/2	27-11/16	22
20	BAYPLNM019	92-1/2	30-7/16	24



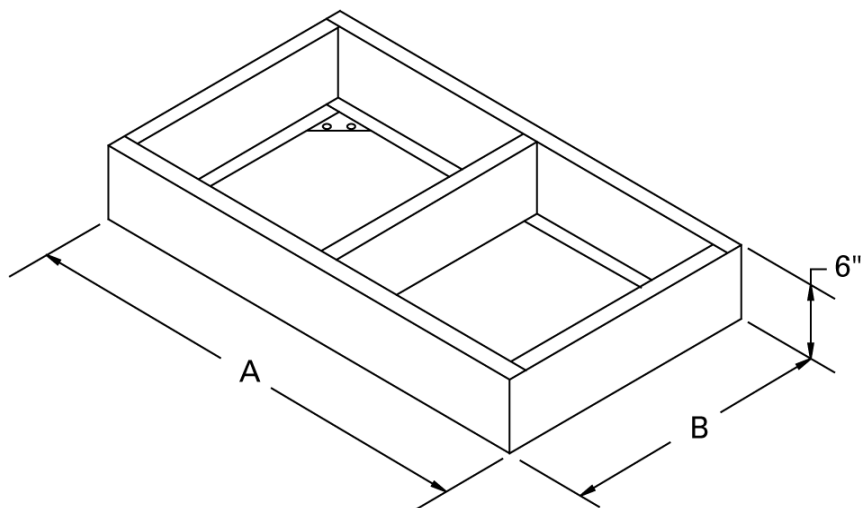
Dimensional Data

Accessories

Figure DD-14 – Subbase

Table DD8 – Subbase Dimensions (in.)

Tons	Model No.	A	B
5	BAYBASE001	38	22
7½	BAYBASE002	47-1/2	25
10	BAYBASE003	63-1/2	25
15	BAYBASE004	79-1/2	27-5/8
20	BAYBASE005	92-1/2	30-7/16



Weights

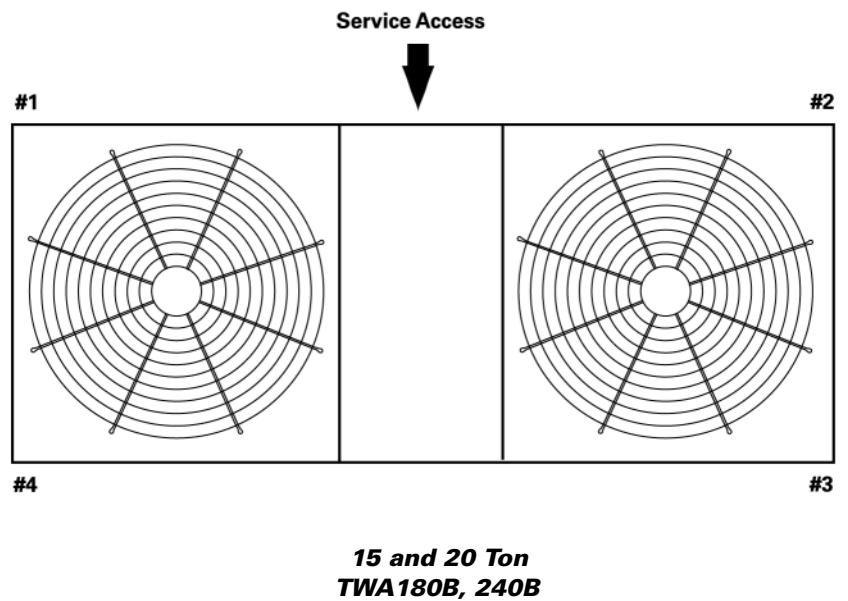
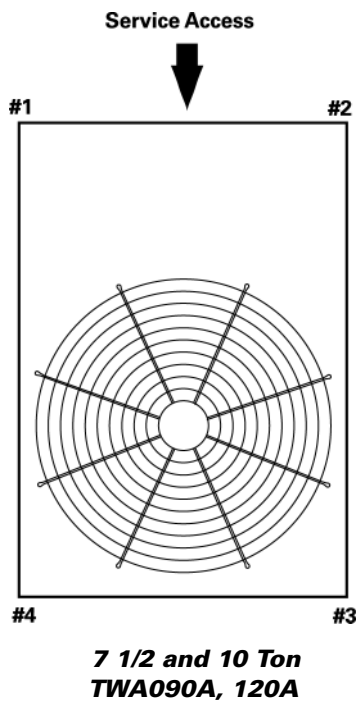
Heat Pumps

Table W-1 – Unit and Corner Weights (lbs.)

Tons	Unit Model No.	Shipping Maximum (lbs)	Net Maximum (lbs)	Corner Weights			
				1	2	3	4
7	TWA090A	390	343	112	89	63	79
10	TWA120A	502	443	149	116	78	100
15	TWA180B	816	740	195	186	175	184
20	TWA240B	970	885	253	250	190	192

Table W-2 – Accessory Weights (net lbs.)

Tons	Unit Model No.	RIS Isolators	Steel Spring Isolators	Anti Short Cycle Timer	Coil Guard	Thermostats	Low Ambient
7½	TWA090A	2	12	1	8	1	23
10	TWA120A	2	12	1	11	1	23
15	TWA180B	2	12	1	22	1	23
20	TWA240B	2	12	1	34	1	23



Weights

Air Handlers

Table W-3 — Unit and Corner Weights (lbs.)

Tons	Unit Model No.	Shipping Maximum (lbs)	Net Maximum (lbs)	Corner Weights — Vertical				Corner Weights — Horizontal			
				1	2	3	4	A	B	C	D
5	TWE060A, B	298	232	59	59	59	59	54	64	64	54
7½	TWE090A, B	388	317	79	79	79	79	73	81	84	77
10	TWE120A, B	439	392	98	98	98	98	95	101	101	95
15	TWE180B	754	692	173	173	173	173	156	174	190	170
20	TWE240B	886	816	204	204	204	204	179	221	228	185

Note:

1 If application requires steam or hot water heating coils, field supplied isolators must be utilized.

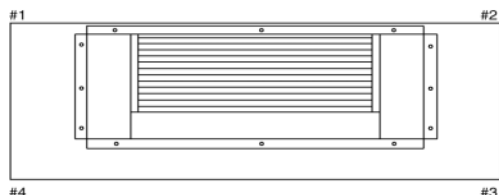
Table W-4 — Accessory Weights (net lbs.)

Tons	Unit Model No.	Discharge Plenum And Grille ¹	Discharge Plenum And Grille ²	Return Air Grille	Electric Heat Min/Max	Subbase	Oversized Motor	RIS Isolator Floor Mount	RIS Isolator Suspended Mount	Steel Spring Isolator Floor Mount	Steel Spring Isolator Suspended Mount	Control Transformer
5	TWE060A,B	58	93	3	32/43	14	31	2	9	12	6	—
7½	TWE090A,B	73	123	5	27/45	19	48	2	6	12	6	4
10	TWE120A,B	92	156	7	27/45	23	50	2	7	12	6	4
15	TWE180B	124	230	10	79/100	27	80	2	7	12	6	—
20	TWE240B	145	264	12	79/100	31	88	2	9	12	6	—

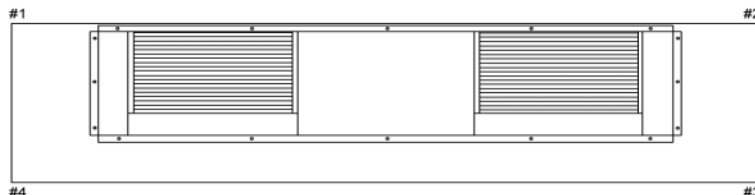
Note:

1 For use when no supplemental heat is supplied.

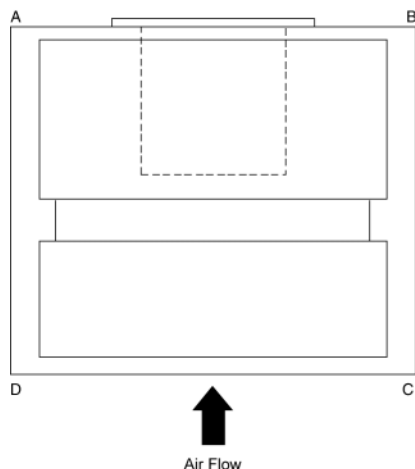
2 For use with electric heat.



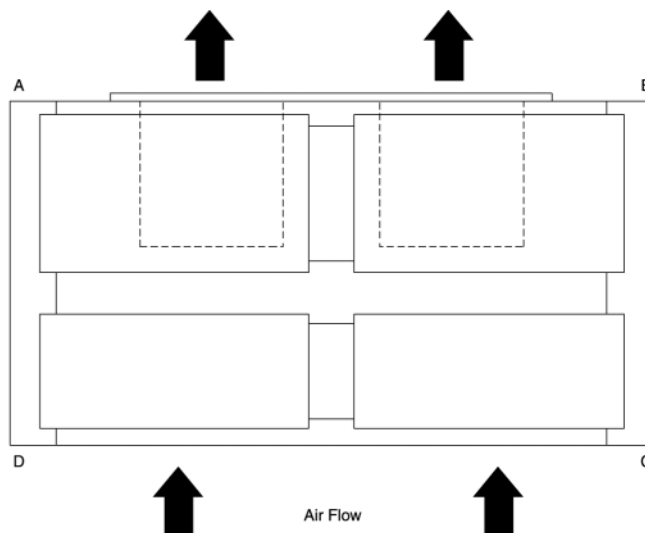
**Vertical - 5, 7 1/2 & 10 Ton
TWE060A, 060B, 090A, 090B, 120A, 120B**



**Vertical - 15 & 20 Ton
TWE0180B, 240B**



**Horizontal - 5, 7 1/2 & 10 Ton
TWE060A, 060B, 090A, 090B, 120A, 120B**



**Horizontal - 15 & 20 Ton
TWE0180B, 240B**

Mechanical Specifications

Heat Pumps

General

Units shall be assembled on heavy gauge steel mounting/lifting rails and shall be weather proofed. Unit shall include a hermetic scroll or reciprocating compressor(s), plate fin condenser coil, fans and motors, controls and holding charge of nitrogen. Operating Range shall be between 115° F to 50° F in cooling as standard from factory. Units shall be UL 1995 listed and rated in accordance with ARI Standard 340/360.

Casing

Unit casing shall be constructed of 18 gauge zinc coated heavy gauge, galvanized steel. Exterior surfaces shall be cleaned, phosphatized and finished with a weather-resistant baked enamel finish. Units surface shall be tested 500 hours in salt spray test. Units shall have removable end panels which allow access to all major components and controls.

Refrigeration System — Single Compressor

TWA090A, TWA120A units shall have a single refrigeration circuit. Each refrigeration circuit has an integral subcooling circuit. A refrigeration filter drier, expansion valve and check valves shall be provided as standard. The TWA090A, TWA120A units shall have both a liquid line and suction gas line service valve with gauge port. TWA090A, TWA120A units shall have one direct drive Trane hermetic scroll compressor with centrifugal oil pump providing positive lubrication to moving parts. Motor shall be suction gas-cooled and shall have a voltage utilization range of plus or minus 10 percent of nameplate voltage. Crankcase heater, internal temperature and current-sensitive motor overloads shall be included for maximum protection. Scroll type compressor shall provide inherently low vibration and noise by having no suction and discharge valves. External high and low pres-

sure cutout devices shall be provided. Evaporator defrost control provided in indoor blower coil unit shall prevent compressor slugging by temporarily interrupting compressor operation when low evaporator coil temperatures are encountered.

Refrigeration System — Dual Compressor

TWA180B, TWA240B units shall have two separate and independent refrigeration circuits. Each refrigeration circuit shall have an integral subcooling circuit. A refrigeration filter drier shall be provided as standard. Units shall have both a liquid line and suction gas line service valve with gauge ports. TWA180B, TWA240B units shall have two Trane direct drive hermetic scroll compressors with centrifugal oil pump and provide positive lubrication to all moving parts. Motor shall be suction gas-cooled and shall have a voltage utilization range of plus or minus 10 percent of nameplate voltage. Crankcase heater, internal temperature and current-sensitive motor overloads shall be included for maximum protection. Scroll type compressor shall provide inherently low vibration and noise by having no suction and discharge valves. External high and low pressure cutout devices shall be provided. Evaporator defrost control provided in indoor blower coil shall prevent compressor slugging by temporarily interrupting compressor operation when low evaporator coil temperatures are encountered.

Condenser Coil

Coils shall be internally finned or smooth bore 3/8" copper tubes mechanically bonded to configured aluminum plate fin as standard. Coil shall be factory pressure and leak tested to 420 psig air pressure. Metal grilles with PVC coating for coil protection is optional.

Condenser Fan and Motor(s)

Direct-drive, statically and dynamically balanced 26 or 28 inch propeller fan(s) with aluminum blades and electro-coated steel hubs shall be used in draw-through vertical discharge position. Either permanently lubricated totally enclosed or open construction type motors shall be provided and shall have built in current and thermal overload protection. Motor(s) shall have either ball or sleeve bearing type.

Controls

Heat pump units shall be completely factory wired with necessary controls and contactor pressure lugs or terminal block for power wiring. Control wiring shall be 24-volt control circuit which includes fusing and control transformer. Units shall provide external location for mounting a fused disconnect device. Time delay timers to prevent compressors in dual compressor units from simultaneous start-up and anti-recycle timers are available as optional accessories.

Defrost Controls

Electronic timed initiated, temperature terminated defrost system with choice of 50, 70, or 90 minute cycle. Timed override limits defrost cycle to 10 minutes.

Low Ambient Operation

Standard units shall start and operate to approximately 50° F when matched with Trane air handlers and coils. Optional head pressure control accessory permits operation to 0° F.



Mechanical Specifications

Accessories

Low Ambient Head Pressure Control — Shall modulate the RPM of unit outdoor fan motor in response to outdoor ambient temperatures and liquid line temperature. Accessory provides unit cooling operation to outdoor temperatures of 0° F.

Vibration Isolation Packages — Shall reduce transmission of noise and vibration to building structures, equipment and adjacent spaces. Packages shall be available in either neoprene-in-shear or spring-flex types.

Time Delay Relay — Shall prevent compressors in dual compressor unit from coming on line simultaneously. Timer shall be 24-volt, 60 cycle, with four minute timing period.

Anti-Short-Cycle Timer — Shall prevent rapid on-off compressor cycling in light load conditions by not allowing compressor to operate for 5-7 minutes upon shutdown. Shall consist of a solid state timing device, 24-volt, 60 cycle with either 5 or 7 minute fixed-off timing period.

Condenser Coil Guard — Metal grille with PVC coating shall be provided to alleviate coil damage.

Black Epoxy Coated Condenser Coil — The black epoxy coils have a thermoset vinyl coating that is bonded to the aluminum fin stock prior to the fin-stamping process. The pre-coated coils are an economical option for protection in mildly corrosive environments.

Air Handlers

General

Air handler units shall be completely factory assembled including coil, condensate drain pan, fan motor(s), filters and controls in an insulated casing that can be applied in either vertical or horizontal configuration. Units shall be rated and tested in accordance with ARI standard 340/360. Units shall be UL listed and labeled in accordance with UL 1995 for indoor blower coil units.

Casing

Unit casing shall be constructed of zinc coated, heavy gauge, galvanized steel. Exterior surfaces shall be cleaned, phosphatized and finished with a weather-resistant baked enamel finish. Casing shall be completely insulated with cleanable, foil faced, fire-retardant, permanent, odorless glass fiber material. All insulation edges shall be either captured or sealed. Knockouts shall be provided for unit electrical power and refrigerant piping connections. Captive screws shall be standard on all access panels.

Refrigeration System

The TWE060A, TWE090A, TWE120A units shall have a single refrigeration circuit and the TWE060B, TWE090B, TWE120B, TWE180B, TWE240B units shall have dual refrigeration circuits. Each refrigeration circuit is controlled by a factory installed thermal expansion valve.

Evaporator Coil

Configured aluminum fin surface shall be mechanically bonded to 3/8" internally enhanced copper tubing and factory pressure and leak tested at 375 psig. Coil is arranged for draw-through airflow and shall provide a double sloped condensate drain pan constructed of PVC plastic. The drain pan shall be removable for cleaning. The condensate drain pan can be installed in any of four positions allowing for vertical or horizontal application and providing external connections on either side of the unit.

Evaporator Fan

Double inlet, double width, forward curved, centrifugal-type fan(s) with adjustable belt drive shall be standard. Thermal overload protection shall be standard on motor. Fan and motor bearings shall be permanently lubricated. Oversized motors shall be available as an option for high static application. All indoor fan motors meet the U.S. Energy Policy Act of 1992 (EPACT)

Controls

Magnetic evaporator fan contactor, low voltage terminal strip, check valve(s), and single point power entry shall be included. All necessary controls shall be factory-installed and wired. Evaporator defrost control shall be included to prevent compressor slugging by temporarily interrupting compressor operation when low evaporator coil temperatures are encountered.

Mechanical Specifications

Filters

One inch, throw-away filters shall be standard on TWE060A, TWE090A, TWE060B, TWE090B and TWE120B model air handlers. Filters shall be accessible from the side coil access panel. Filter rack can be field converted to two inch capability. Two inch, throw-away filters shall be standard on TWE180B and TWE240B models.

Accessories

Electric Heaters — UL and CSA approved electric heat modules shall be available for installation directly on fan discharge. Electric Heaters shall be available in a wide range of capacities with one or two stage control, single-point electric power connection and terminal strip connections. Electric heater elements shall be constructed of heavy-duty nickel chromium elements internally wye connected on 480/600 volt, three phase and delta connected on 208/240 volt, three phase. Each 208/240 volt heater shall have pilot duty with secondary backup fuse links for automatic reset of high limit controls. Each 480/600 volt heater shall have automatic line break high limit controls.

Discharge Plenums and Grilles — Accessory discharge plenums shall be available for vertical, free discharge applications. Plenums shall be constructed of heavy-gauge, zinc coated galvanized steel finished with baked enamel to match the air handler unit. Grilles shall be satin finished aluminum and have four-way adjustable louvers.

Return Air Grilles — Accessory return air grille shall be provided for vertical front, free return applications. Grilles shall be installed in place of the front lower side panel. Grille shall be satin finished aluminum with non-adjustable louvers.

Mounting Subbase — Available for vertical floor mount configurations. Subbase shall be constructed of heavy gauge, zinc coated galvanized steel

with baked enamel finish to match air handler unit. Subbase is required in the vertical air flow application for condensate drain trapping and when isolators are required.

Vibration Isolators — Shall reduce transmission of noise and vibration to building structures, equipment and adjacent spaces. Packages shall be available in either neoprene-in shear or spring-flex types in floor or suspended mountings.

Oversized Motors — Field installed oversized motors shall be available for high static pressure applications.

Control Options

Standard Indoor Thermostats — Two stage heating and cooling operation or one stage heating and cooling thermostats shall be available in either manual or automatic changeover.

Programmable Electronic Night Setback Thermostat — Shall provide heating setback and cooling setup with 7-day programming capability.

Outdoor Thermostat — Shall provide staging control of electric heaters based on a set outdoor temperature.



*See Operational Manual
OM-340 for exceptions.



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